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# COMMERCE

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AUGUST, 1948

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Acme photo

ing aluminum in the war-built plant at McCook, Ill., now operated by Reynolds Metal Company

ALUMINUM: NOW YOU SEE IT, NOW YOU DON'T—See page 16



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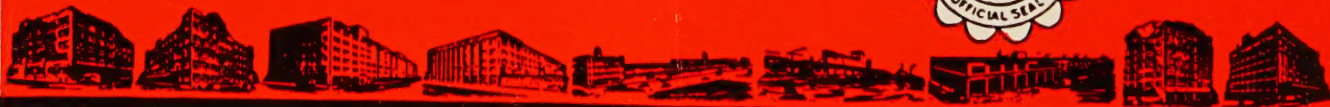
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## Crooks Terminal Warehouses, Inc.

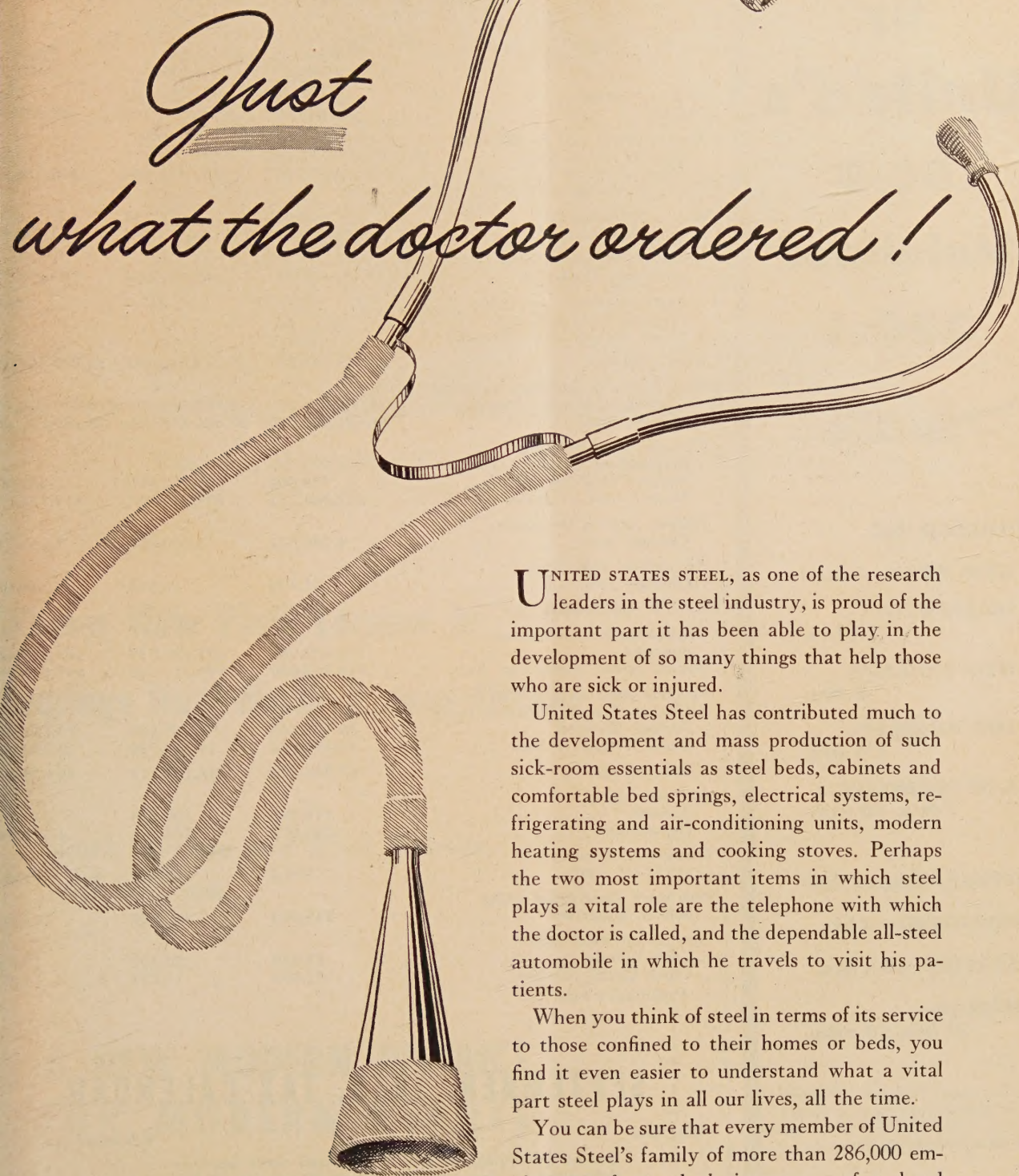
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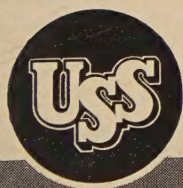
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# STATISTICS OF CHICAGO BUSINESS

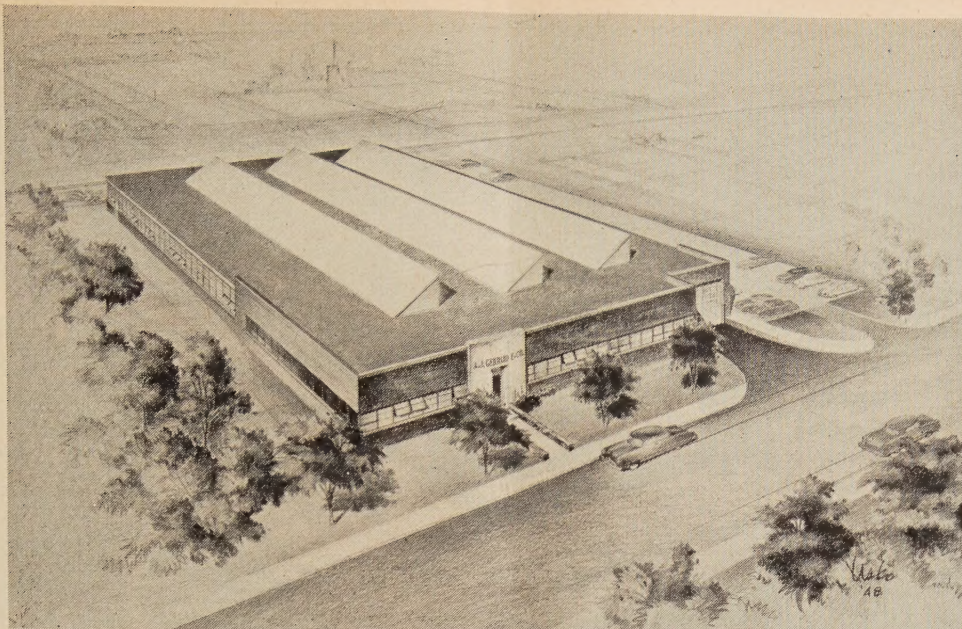
	June 1948	May 1948	June 1947
Building permits .....	892	663	
Cost .....	\$19,633,500	\$10,091,100	\$7,647,700
Contracts awarded on building projects, Cook Co. ....	1,069	1,157	2,100
Cost .....	\$46,675,000	\$39,442,000	\$38,224,000
(F. W. Dodge Corp.)			
Real estate transfers .....	6,963	6,233	6,500
Consideration .....	\$6,879,687	\$6,344,346	\$5,304,200
Retailers' Occupation Tax collection, Cook Co. ....	\$7,688,411	\$7,627,664	\$7,372,700
Department store sales index (Federal Reserve Board) (Daily average 1935-39=100)	255.0 <sup>1</sup>	237.5	233.0
Bank clearings .....	\$3,355,758,897	\$3,182,932,789	\$2,925,318,700
Bank debits to individual accounts:			
7th Federal Reserve District .....	\$16,240,000,000	\$14,788,000,000	\$14,579,600,000
Chicago only .....	\$8,626,931,000	\$7,686,858,000	\$8,189,979,000
Chicago Stock Exchange transactions:			
Number of shares traded .....	758,000	972,000	462,000
Market value of shares traded .....	\$22,964,725	\$25,224,834	\$13,554,100
Railway express shipments, Chicago area .....	1,566,521	1,500,966	1,961,770
Air express shipments, Chicago area .....	55,496	56,584	48,400
L. C. L. merchandise cars .....	28,276	28,052	29,300
Originating local telephone messages .....	176,452,562	175,288,735	165,837,100
Electric power production, kwh. ....	916,662,000	915,211,000	843,676,000
Revenue passengers carried by Chicago Transit Authority lines:			
Surface Division .....	69,372,346	71,005,401	73,711,800
Rapid Transit Division .....	14,498,664	14,748,330	14,592,600
Postal receipts .....	\$7,988,406	\$8,161,112	\$7,034,600
Air passengers:			
Arrivals .....	119,698	106,524	118,800
Departures .....	123,672	108,502	112,440
Consumers' Price Index (1935-39=100) .....	176.2	174.9	158.0
Live stock slaughtered under federal inspection .....	535,049	456,839	496,460
Families on relief rolls:			
Cook County .....	15,326	20,309	15,660
Other Illinois counties .....	12,694	15,255	14,370

<sup>1</sup>—Preliminary figures.

## SEPTEMBER, 1948, TAX CALENDAR

Date Due	Tax	Returnable to
1	Second installment of 1947 Real Estate taxes becomes delinquent on this date and subject to penalty of 1% per month thereafter	County Collector
15	Employers who withheld more than \$100 during previous month pay amount withheld to	Authorized Depository
15	Illinois Retailers' Occupation Tax return and payment for month of August	Director of Revenue
15	Third quarterly installment of 1947 Federal Income Tax by corporations and fiduciaries	Collector of Internal Revenue
15	Payment of one-quarter of 1948 estimated tax found due March 15, or one-third of the balance of 1948 estimated tax found due June 15. (Those required to file declaration for first time, or making revised declaration, pay one-half of the balance of 1948 estimated tax)	Collector of Internal Revenue
30	Federal Excise Tax return and payment due for August, 1948	Collector of Internal Revenue





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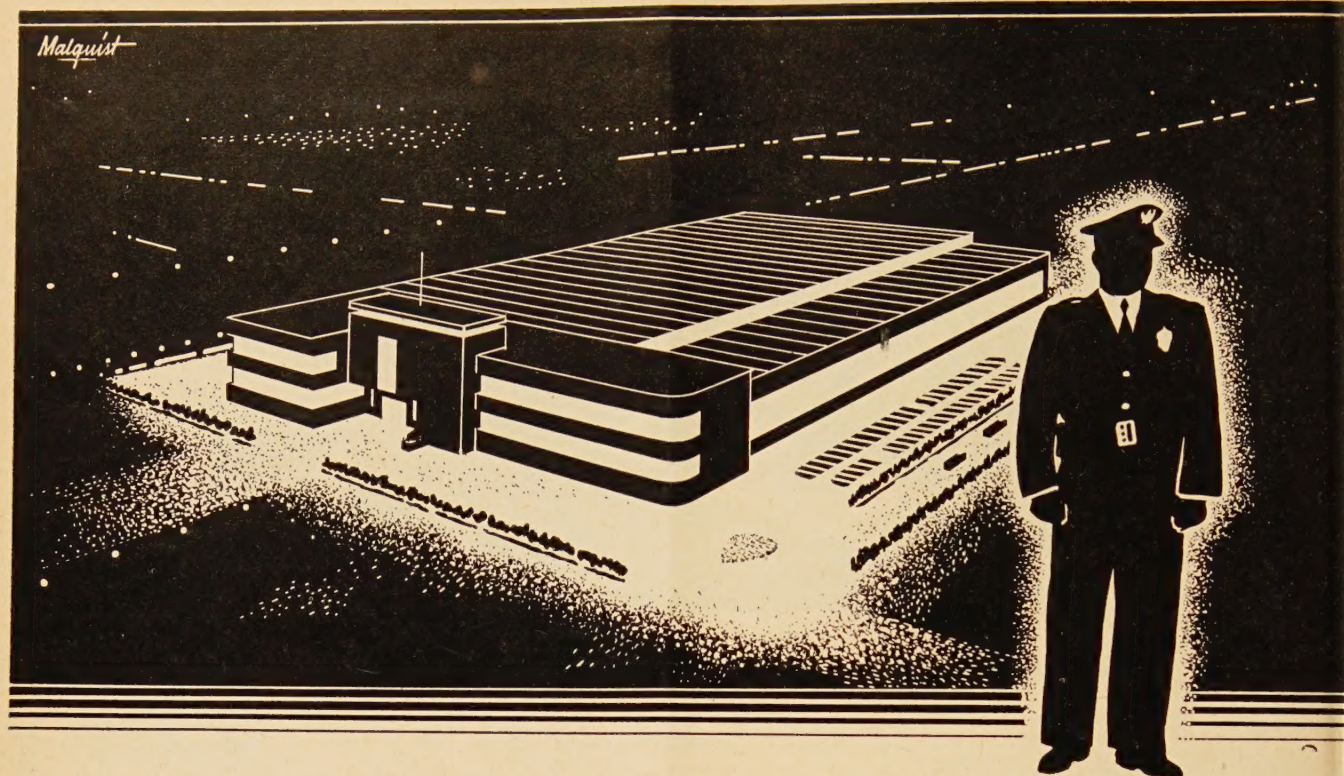
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38 South Dearborn Street

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# COMMERCE

M A G A Z I N E

PUBLISHED SINCE 1904

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Lewis A. Riley, Associate Editor

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POSTMASTERS ATTENTION: Change of address cards on Form 3578 should be sent to 1 North LaSalle Street, Chicago 2, Illinois.

## In This Issue--

Only a few months ago there was talk of an abundance of aluminum and a scarcity of peacetime markets. Today, there is growing concern over the likelihood of a serious aluminum shortage. Behind this reversal lies an interesting postwar slump-to-boom story about the light metal which is reviewed on page 16.

"Bill X" is a skilled factory workman who drinks excessively. Should he be fired? An increasing number of companies believe not, that he should be treated as an investment that must be recovered if possible. Joe Egelhof, staff writer of the CHICAGO JOURNAL OF COMMERCE, tells the story of "Bill X" and what industry is doing for him on page 15.

An old industrial battle, the war against noise, is being waged more vigorously than ever with new scientific instruments that prove emphatically that "silence really can be golden." Progress in the war against noise is reported by Daniel F. Nicholson on page 13.

If you are a stamp collector and read the stamp article on page 18, you will probably spend tomorrow morning browsing through your company's mailroom. There, COMMERCE reports, stamps accumulate from everywhere in the world and begin their journey, by a variety of routes, to collectors' albums.

How does a permanent magnet work? Science cannot answer that question; yet, it is using these sources of permanent energy in a variety of highly useful new ways. "Practical Magic With Magnets" begins on page 20.

How will the draft affect industry? Chances are it will begin squeezing some categories of manpower almost immediately. Businessmen are cautioned not to write off the draft as merely a calling-up of stockboys in a review of the second peacetime draft beginning on page 22.

## NEXT MONTH:

"New Tests Spot Executives — In Advance," by Dr. Burleigh B. Gardner, executive director of Social Research, Inc., which appeared in the March, 1948, issue of COMMERCE, has drawn widespread comment. Next month, COMMERCE will present a second article by Dr. Gardner cataloging those personality traits which prevent success as an executive.





## "They're coming! The telephone men are coming!"

"They're coming!" shouted a West Virginia mountain boy. "They say we'll have our telephone before the end of the week, and so will Grandma!"

That's happening all over the country. During the past two and a half years, Bell Telephone companies have added about 775,000 telephones in rural areas—built enough new rural pole lines to stretch nearly two and one half times around the world—strung more than 375,000 miles of wire.

In this vast program of rural telephone expansion, West-

ern Electric is playing a vital part: manufacturing telephones, switchboards, wire and cable — supplying poles, crossarms, insulators, power-driven pole hole augers and many other tools the construction crews need to do their jobs quickly and well.

In cities, towns and suburban areas, too, *more* and *better* telephone service is coming fast. To help the Bell Telephone companies meet *your* needs, Western Electric is today doing the biggest manufacturing and supply job in all its 66 years as a unit of the Bell System.

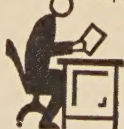
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# The Editor's Page

## Pity Congress

THE stage is being set for the first major postwar test of the agricultural support program.

Wheat prices have been steadily declining since the peak last January. Meanwhile, rising industrial prices have been forcing parity higher and higher. Currently the wheat support price is somewhat above \$2.25 a bushel, and with the latest round of wage-price increases (coal, freight rate, fuel, farm equipment, automobiles, etc.) it seems certain to go higher. On the other hand, the year's bumper crop and the prospects for smaller exports next year continue to act as depressants on wheat prices. The net result of these forces is that a substantial part of the crop is now being placed under government loans and stored.

The \$64 question is what happens next. When the parity plan was adopted the idea was that controls would be used to reduce production when the government had to support a commodity. Will farmers reduce production to curb supply when the support price is so high and likely to go higher? If they don't, or nature doesn't in the form of a bad crop year, the federal treasury is destined to take a heavy beating at the taxpayers' expense. What will the taxpayers do then? What will the urbanite's attitude be, especially if meat prices are still topping a dollar a pound because of too scarce supplies resulting from the high prices of feed grain?

This neat conundrum promises to be among the many tough ones the next congress will have to solve. And in the galleries will be two highly potent political groups. On one side will be the meat hungry, price conscious urbanites. On the other will be the farm groups, well solidified and thoroughly reluctant to forego an ounce of the guaranteed prosperity to which they have become accustomed by virtue of either worldwide shortages or government subsidy.

## Promoting European Self-help

IN the recent news on our efforts to promote European recovery two developments give cause for genuine optimism. One is the announcement that an agreement has been reached with Great Britain for a mission of American production experts to study her industry and make suggestions to increase its efficiency. The other is the news that representatives of the American machine tool industry are going to visit Marshall plan countries to help them obtain American machinery to boost their production.

These related moves are aimed at two of the roots of the British and European problem. By comparison with ours much of their productive machinery admittedly is antiquated; so also are many of their managerial techniques years behind standard practice in American factories. If we can aid them in either respect, we will not only be helping them but ourselves as well. Anything that bolsters

their productivity should reduce commensurately the relief load we have undertaken in their behalf. Also, the least expensive assistance we can give is knowhow and capital goods. One, though priceless, costs little or nothing to pass on; the other, once provided, permanently lessens the need for further help.

Paul G. Hoffman, head of the ECA, who paved the way for these missions to Europe in his recent negotiations there, is to be congratulated. He is putting into practice the time tested axiom that the best way to help someone else is to help them help themselves.

## Why Not a Magic Wand?

PRESIDENT Truman has again called for the immediate passage of a public housing bill such as the Taft-Wagner-Ellender bill. What he was thinking of unless it was the Fall elections is difficult to imagine.

The building industry is well on its way to constructing more housing this year than in any year since the nineteen-twenties. To attain the present level the industry is using all the material it can lay its hands on, and employing the available labor force to just about the last man.

Under these circumstances no amount of public housing legislation could get any more buildings erected. If a workable law could be drafted to increase the material supply and the productivity of building trades labor it might help. The President did not seem to have either of these points in mind, however, when he made his recommendations. Neither did he seem to be thinking of the swollen federal budget and stifling tax load.

It requires real Alice In Wonderland reasoning to justify imposing new subsidy costs on the already overburdened treasury when the added expense wouldn't produce even one more unit of housing.

## A Glad Passing

IT is rare indeed, when a federal agency or corporation is liquidated, and even more rare when this is accomplished at a profit.

The Public Housing Administration reports, however, that that is what has happened to the Defense Homes Corporation, which was created in 1940 to provide housing for defense workers. DHC, says PHA, has disposed of all of the 10,964 housing units ranging from individual homes to an apartment hotel that it built and operated, mainly to private purchasers and at a profit of \$2,100,000. The corporation with its capital stock, assets and liabilities has now been turned over to the RFC for liquidation.

For this a fitting epitaph should certainly be written, inscribed in marble and mounted on high in the national capital.

*Alan Sturdy*



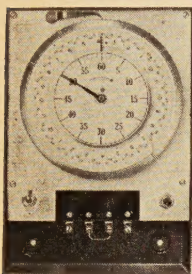
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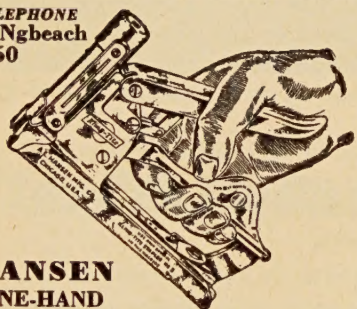
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# HERE-THERE and EVERYWHERE

• **Aircraft Television Relay**—Westinghouse Radio Stations, Inc., subsidiary of Westinghouse Electric Corporation, reports that the major technical problems in rebroadcasting television programs—stratovision broadcasting—from an airplane have been solved. The company has made application to the Federal Communications Commission for a television channel to broadcast from the skies over Pittsburgh. This method of relaying television programs beamed from a ground station greatly extends the radius in which the program can be received. At present, programs broadcast from the highest earth-bound antennas have a maximum range of about 50 miles compared with a recently demonstrated range of about 250 miles for programs rebroadcast from a plane flying at an altitude of six miles.

• **WAA Sales Speedup**—The Chicago region of the War Assets Administration has set its sights on disposing of all war surplus personal property by the end of this year, and selling not less than 50 per cent of its remaining inventory of real property by February 28, 1949. If the first goal is met, approximately \$114,000,000 worth of capital and consumer goods will be sold by December 31. The planned speedup has been made possible by congressional action which stops further additions to WAA stocks and also eliminates the time consuming priority system that has governed sales.

• **PR Bibliography**—Already volumes have been written on the youthful and still much debated public relations profession. The University of Texas bureau of business research has just published "A Selected and Annotated Bibliography of Literature on Public Relations" containing 14 pages of listings.

• **Atomic Research**—The John Crerar Library of Chicago has contracted with the Atomic Energy Commission to do the abstracting of scientific books and periodicals which is necessary to the atomic energy re-

search being sponsored by the commission. A special staff of experts, to be established by the library, will study the 3,500 scientific periodicals it receives for material pertinent to atomic research, abstracting the data and, when necessary, translating it.

• **Costly Vandalism**—Marksmen who draw beads on rural traffic signs with guns or rocks are one of the little known headaches of highway maintenance men. In Kentucky, for example, 12,000 signs were shot up and banged up last year, at a replacement cost of some \$30,000. The state keeps fourteen crews constantly busy replacing battered signs.

• **Down on the Farm**—Latest Census Bureau studies show that the long-term prewar trend toward a small farm population in the United States has continued in the current decade. Approximately 27,439,000 persons lived on farms in January of this year, a decrease of some 3,108,000, or 10 per cent, since April 1, 1940. Though the long time trend may be changing is indicated, however, by the fact that the farm population in January of 1948 showed little change from that of January, 1947.

• **Sky Ride**—An aerial tramway almost five miles long, which was completely fabricated in this country by the American Steel and Wire Company, is now in service in the foothills of the Auvergne Mountains in France. The tramway was erected to carry men and materials to the construction site of the Chastang Hydroelectric Dam being built on the Dordogne river at Argentat, France. The complete tramway—cables, ropes, mechanical and electrical equipment and structural steel—was designed and fabricated in the United States from accurate topographical surveys made of the French terrain.

• **Freight Car Goal reached**—In June the Railway car building industry hit its monthly production goal of 10,000 freight cars for domestic service for the first time since the goal was set.

(Continued on page 41)



# SEPTEMBER 18 IS C-DAY

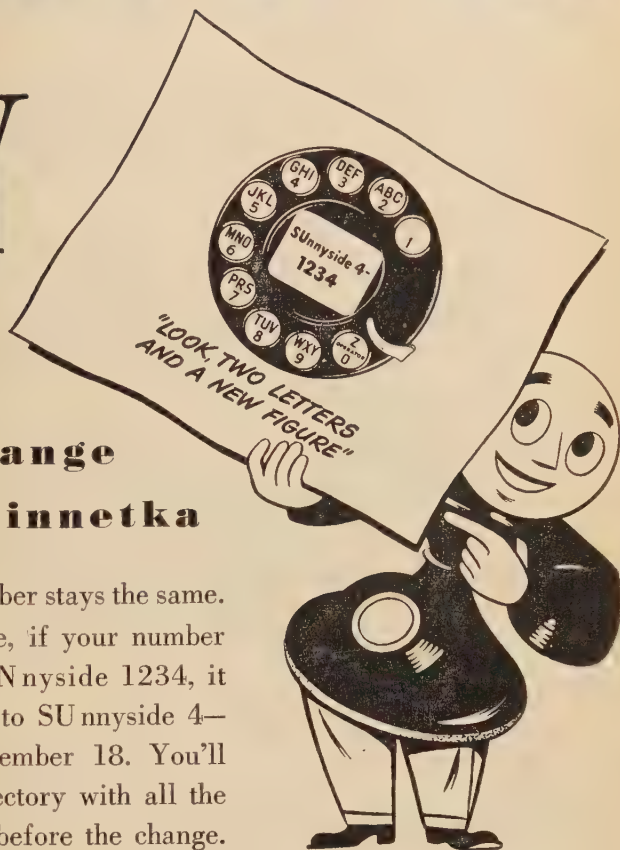
## All Telephone Numbers Change in Chicago, Evanston and Winnetka

Sept. 18 is Change Day (C-Day) for all telephone numbers in Chicago, Evanston and Winnetka.

A figure will be added to every exchange name. You will dial it instead of the third letter: *Two letters* — then the *new figure*. The

rest of the number stays the same.

For example, if your number were now SUNnyside 1234, it would change to SU<sup>N</sup>nyside 4-1234 on September 18. You'll get a new directory with all the new numbers before the change.



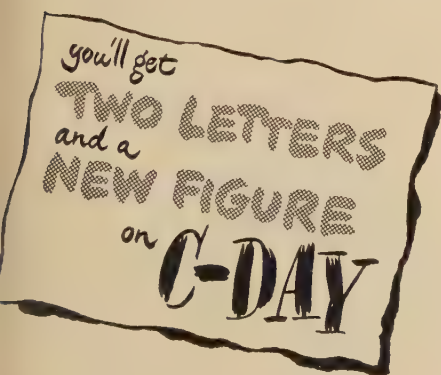
### Just as easy—only different

**FROM A DIAL TELEPHONE:** Beginning September 18, dial the first *two letters*, then the *new figure* that replaces the third letter. For example, for Lincoln

numbers you'll dial LI9 instead of LIN. The rest of the number stays the same.

**FROM TELEPHONES WITHOUT DIALS:** Starting C-Day, give the operator the new figure after the exchange name. For example, you'll say: "Lincoln nine, two seven four four" instead of "Lincoln two seven four four." The nine will be part of the exchange name.

**THE CHANGE PERMITS TELEPHONE PROGRESS.** The new plan provides more numbers for telephone expansion. If all LIcoln 9 numbers are used up, we can add LIcoln 3 or LIcoln 7. And you won't have to remember a completely new exchange name. The new system reflects the growth of our community, and it will permit future telephone improvements.



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## Trends in FINANCE and BUSINESS

### Productivity Up This Year, Board Finds

Is the average factory employe turning out more goods per hour today than a year ago? A cross-section of industrial concerns, asked that question by the National Industrial Conference Board, indicate that the answer is definitely "Yes." In fact, reports the board, slightly over two-thirds of the companies surveyed note physical output per man hour higher this year than in 1947, or in any pre-war year.

The chief contributing factor, according to the survey findings, is improved equipment and tools, which also mean better quality products. Other factors in the trend toward great productivity are improved material flow, decreased labor turnover, better production methods and plant layouts, more efficient handling and the adoption of incentive plans.

Among those reporting higher productivity are the automobile, industrial machinery, machine tool, office equipment, paper and steel industries. Leather and textile manufacturers were among the 23 per cent of companies that reported no change in productivity. Ten per cent said output was down.

« « » »

### Coverage Up Under Today's Hospital Plans

The man who enjoys hospital insurance is getting considerably more for his premium dollar today than three years ago, despite the fact that some insurance company rates have gone up. This is the conclusion reached by the Health and Accident Underwriters Conference, which finds in surveying 1948 policies that they contain fewer exclusions and limitations and provide greatly increased coverage over 1945 policies.

For example, the number of policies written for \$3, \$4 and \$5 per day benefits has decreased sharply while those paying \$6, \$7, \$8 and \$9 per day have increased. Policies limiting full benefits for any one accident or illness to 21 days, 28 days and 30 days have been supplanted generally by policies limiting coverage for periods ranging from 45 to 180 days.

In 1945, only 32 per cent of the

policies analyzed paid miscellaneous hospital expenses; now over 57 per cent do. Three years ago, very few companies would accept children under one year for coverage; today virtually all accept infants at three months and a large percentage at one month.

Thus, observes the Underwriters Conference, "The general trend in claim ratios among companies writing individual and family group hospital coverages has been upwards and profit margins have narrowed considerably. Greatly increased production, however, has tended to offset this and to leave this type of business on the profit side of the ledger."

« « » »

### Probing Gaps In Today's Statistics

In the complex task of running business today, statistics are becoming more vital than ever. and, of course, the government is the greatest source of current industrial statistics. Most businessmen realize, however, that even the government statistics are inadequate.

The Joint Congressional Committee on the Economic Report has been looking into this problem and has recommended specific areas where business requires more adequate figures. For example, says the committee, industry should be provided with periodic surveys of consumer purchasing power and demand, sufficient to show the distribution of income and savings available for expenditures by geographic areas and among various consumer groups and income brackets, plus current and prospective patterns of consumption and expenditures.

Also, there should be collected information on wage earnings of employees in activities not covered by social security; information on returns to capital and management of unincorporated businesses should be improved; information on employment and unemployment adequate to reveal geographic trends should be collected; more complete and current information on financial trends in business should be developed; and an up-to-date census of wholesale and retail trade and services should be taken.

(Continued on page 29)



# To St. Paul- Minneapolis



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Newly equipped	AM Twin Cities HIAWATHA . . . . .	Lv. 10:30 AM
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New cars	Olympian HIAWATHA . . . . .	Lv. 3:30 PM
New cars	PIONEER LIMITED . . . . .	Lv. 10:15 PM
	MINNESOTA MARQUETTE . . . . .	Lv. 10:30 PM { via Madison and Austin
	COLUMBIAN . . . . .	Lv. 11:15 PM

**8 fine trains  
returning**



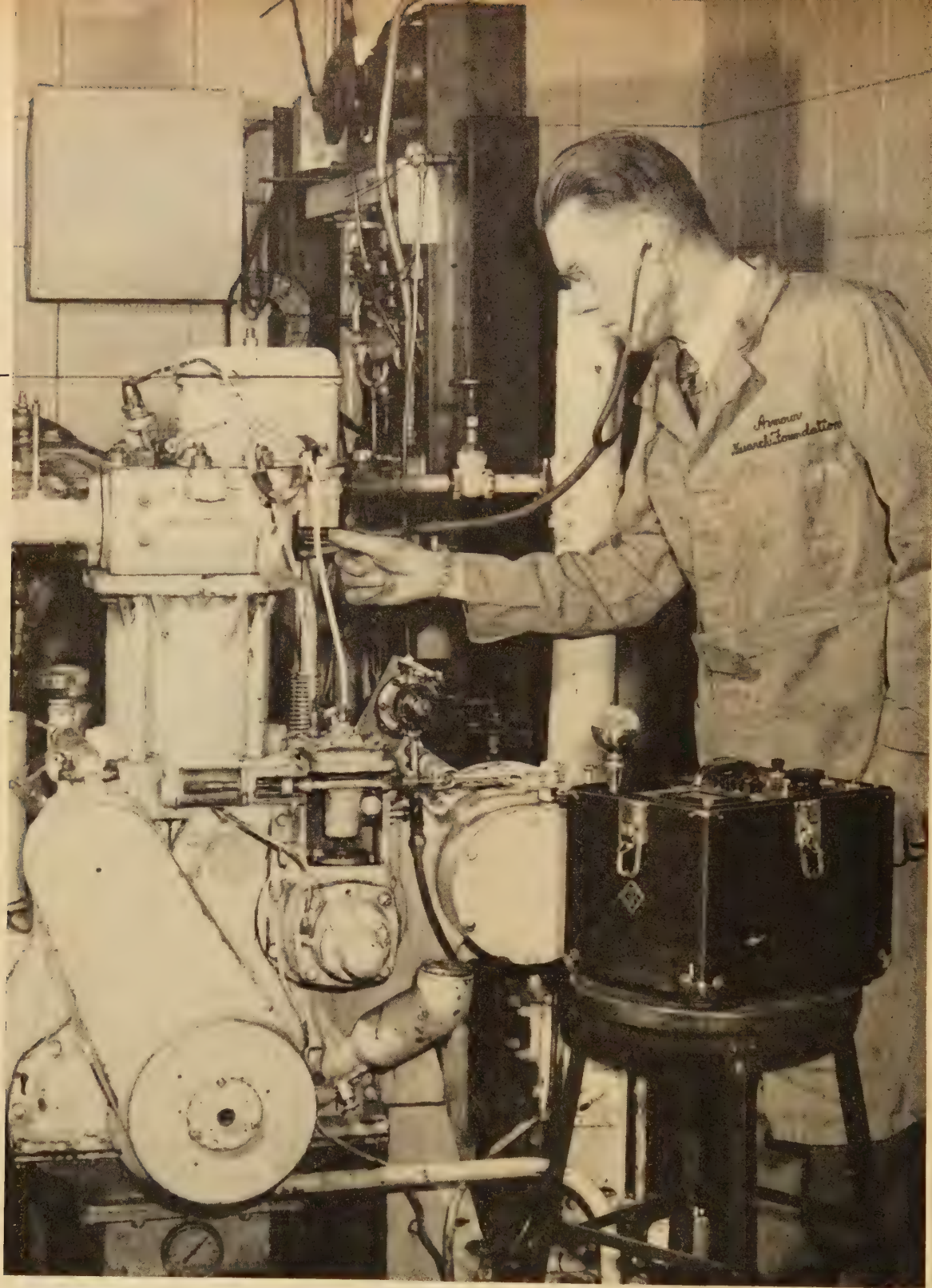
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In Armour Research Foundation's engine lab, technician finds source of noise with stethoscope

*Industry Is Joining The War Against Noise-Jangled Nerves*



# Modern Science Fights Noise With Stroboscope and Camera

By

DANIEL F. NICHOLSON

**I**F YOU should happen to see a chap with a stethoscope plugged into his ears, giving a careful examination to a washing machine or a punch press, don't be alarmed. He's an acoustical engineer intent on a most useful job—the elimination of unnecessary and objectionable noise at its source.

Noise is being attacked over a widening front, and with a vengeance that bodes ill for those responsible for the offensive noises that make modern communities increasingly unpleasant places in which to live or work. A significant straw in the wind was the launching, last July 14, of a one-year survey of noises in Chicago, under the sponsorship of the Greater Chicago Noise Reduction Council and the Armour Research Foundation of the Illinois Institute of Technology. The survey really is a resumption of a study started before the war but halted early in 1943. It is the first real study of its kind to be undertaken since the late twenties when an analysis was made of New York City and the book "City Noise" was published. That book was the basis for anti-noise ordinances not only in New York but in many other cities.

## Factory Owners Warned

Allen Wilson, president of the National Noise Abatement Council, reports a demand for many years and by many cities for the information that the Chicago survey is expected to produce. "They wish to use the information we expect to obtain as a basis for workable noise abatement legislation," Wilson declares. These words are a warning to factory owners, truck manufacturers and operators, motorists, and everyone else affiliated with obnoxious noises, that the time has arrived to give relief to the jangled nerves of city residents.

A fair idea of what can be done to reduce unwanted noise can be obtained by comparing any familiar household appliance with its counterpart of ten

or fifteen years ago. Today's refrigerator is silent alongside the refrigerator of a few years back. This is true also of the vacuum sweeper, the alarm clock, the electric fan, and so on, up to and including oil burners and stokers.

A point to be noted, however, is that these improvements have not come about because manufacturers generally were interested in the noise problem for its own sake. To the contrary, the impetus came from consumer demand. Customers shopping around for a new washing machine, an alarm clock, or what not, showed a decided preference for models that ran quietly.

## No Guesswork Today

Another point to be noted is that a great part of the noise reduction that has been achieved with appliances and machines of all kinds has been the result of trial and error methods rather than the application of the highly developed knowledge and techniques of acoustical engineers. But business is turning to the scientific method. Problems are being handed over to laboratory experts who are specially trained in sound, and some companies—Ford Motor Company and Pullman-Standard Car and Manufacturing Company are recent examples—are establishing special sound departments in their own organizations.

But while industry is deeply conscious of the evils of noise where it hurts sales, it has paid little attention to the evils of noise in products that don't go to the home, or noise in factories and plants. Many factories are becoming noisier. New machines are bigger than ever, and operate at higher speeds. This means more noise. Builders of machinery and machine tools are not particularly interested in making quieter products because the buyers of this equipment are concerned with what it can do, not how it sounds.

There are exceptions, of course. Some factories and plants have not only corrected bad conditions arising from a

particular machine or department, but have gone through their entire property to make working conditions better from the standpoint of sound. This sort of thing got a strong impetus during the war when women took up industrial work previously reserved for men. They were completely unprepared for the noise that was waiting for them, and many refused to stay on these unpleasant jobs. Other managements have extended noise abatement programs to factories after observing the good effects of similar programs in their offices.

A lot has been learned about sound in the last few years, and acoustical engineers are far better equipped than ever before to deal with sound that is unwanted. The problem of eliminating noise has been simplified by the discovery that the intensity of a sound, that is, the energy force it contains, is not necessarily a good indication of its obnoxiousness. The really important thing is the frequency, or pitch. A noise that is high in frequency is much more disturbing to the human ear than one that has a low frequency or pitch. For example, the deep roar of an airplane is much more intense and yet less objectionable than the high pitched noise of a street car.

## Amazing New Instruments

New instruments have been developed to measure and analyze noise or sounds. The sound level meter used to make the survey of New York City's noises would be inadequate for today's engineers. It measures only the intensity, and this may give little indication of what the human ear hears. A well equipped acoustics laboratory now includes not only a sound level meter but such additional equipment as a stroboscope, a sound analyzer, a vibration meter, a sound level response recorder, a cathode ray oscillograph, a beat frequency oscillator, a microphone, audio amplifiers, an electronic voltmeter, a magnetic recorder, an expensive camera to photo-



graph sound waves, and a set of octave band filters, and a stethoscope, of course. An experienced acoustical engineer has his ears so well trained that he can recognize frequencies and other elements in noises without the aid of instruments. But where there is a jumble of sounds, or volume of background noise, he relies on instruments.

While an ordinary laboratory is good enough for most observations, it is sometimes necessary to make measurements free from the reflections of sound from ceilings, walls, floors and furniture. In this case the engineer must have an anechoic room—an acoustical chamber that does not reflect sound from the walls.

Skill in using elaborate instruments for sound analysis is not enough. The acoustical engineer must also understand the psychology of hearing if he is to produce satisfactory results. For example, the human ear hears a sound source of many frequencies as a much louder sound than one of equal intensity but with a single or pure tone. Again, discomfort is created when reverberations of sound reflected from walls, floor and ceiling cause noise to be a jumble, whereas workers notice

an improvement when they are able to determine the origin of noises. Some noises, or sounds, are even desirable because they enable a worker to gauge the performance of the machinery with which he is working. Since high frequency is the most important single element in making a noise irritating, engineers seek to lower the high pitched sounds wherever possible.

Dr. Howard C. Hardy, supervisor of the acoustics and vibration section of the Armour Research Foundation, lists four principal ways to reduce sound radiation. They are: 1. Lower the frequency of the radiation; 2. Reduce the size of the radiating surface; 3. Remove baffles so that the sound becomes a dipole source; 4. Enclose the object.

#### Lower Frequency : Less Noise

There are many examples in industry where the sound radiation has been reduced by lowering the frequency of rotating machinery, according to Dr. Hardy. The automobile muffler uses this means, along with others, to reduce the sound of the engine exhaust. Armour Research Foundation engineers were able to solve the problem of a squeaky automobile V-belt by a reduction of resonance, but not until they had encountered considerable trouble in locating the exact source of the squeak. The engineers observed that the squeak came from a point near the entrance and emergence of the belt from a small pulley. They took a sound spectrum and found a resonant peak at a frequency corresponding to the pitch of the sound they wanted to eliminate. However, nothing from the belt resonated at this frequency, and the squeak remained even when pulleys having different natural frequencies were used.

Finally the engineers discovered that the squeak frequency corresponded to the natural frequency of the air column under the V-belt and between it and the pulley. The air column acted like a pipe organ in amplifying the sound

at a particular point in the spectrum. By lengthening the air column the pitch was reduced. Knowing what to look for in this instance probably saved many hours of hard work, and assured final success, as compared with a trial and error procedure.

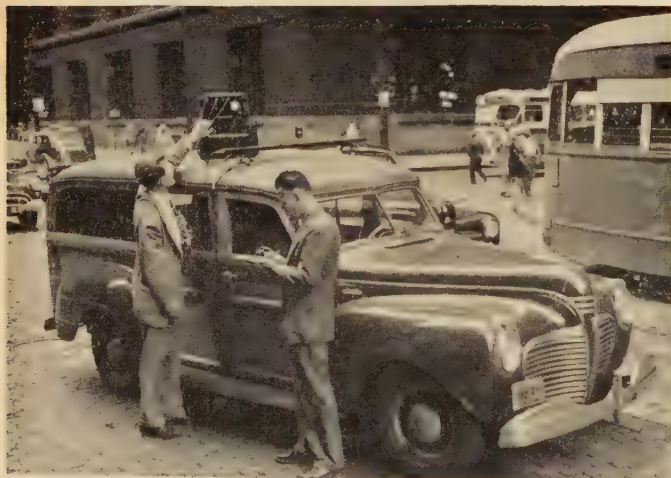
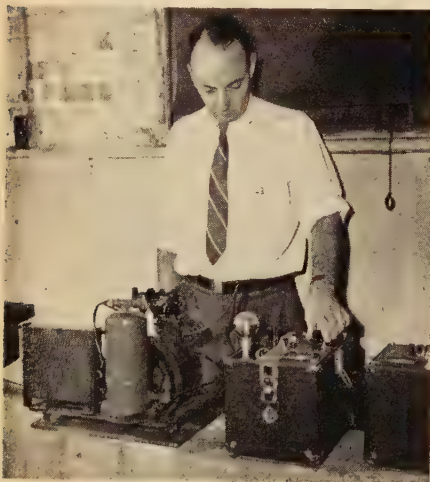
Reduction of the radiating surface is a principle that is fairly easy to demonstrate. A violin string by itself would not give off a very loud sound, but when it is coupled to a violin the sound is greatly amplified. Another illustration is a typewriter attached directly to a desk, without a felt pad or rubber "feet" to take up some of the vibrations. The desk acts as a sounding board and the typewriter is unbearably noisy. Acoustical engineers "isolate" many sounds by introducing a spring, rubber or felt, between the source of the vibrating energy and the supports or other members with which it is connected. This is called reducing the coupling between the energy source and the part that is amplifying the vibrations. Sometimes it is necessary to provide stronger or more massive supports to reduce vibration, or even to provide new walls. "It is surprising," says Dr. Hardy, "how often a flimsy wall is the cause of noise and vibration, rather than poor acoustic design of a product."

The reduction of noise by converting the source into a so-called dipole radiator is a method frequently applicable to machinery. Dr. Hardy explains that in a simple radiator all the vibrating parts contribute wave motions in phase or unison, examples being a horn, a kettle drum, or a loudspeaker with the back enclosed. A dipole radiator, on the other hand, has two radiating surfaces in opposite phase, such as the tuning fork, a vibrating wire, or a loudspeaker whose back is not enclosed. The amount of sound radiated by a dipole source is far less because the radiations from the two sides tend to cancel each other.

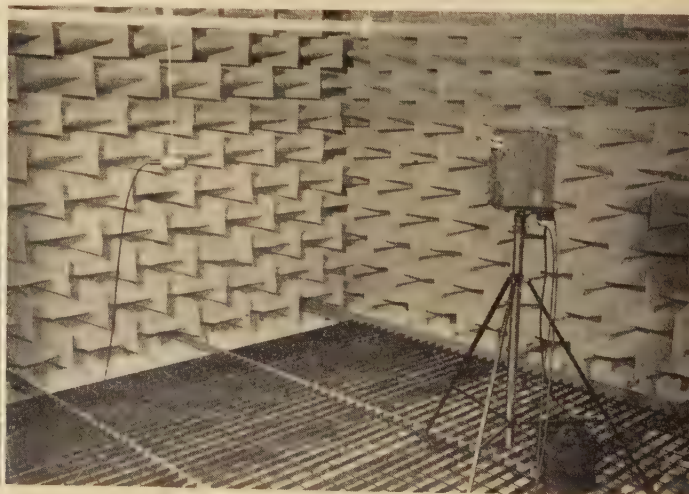
A practical example of the applica-

(Continued on page 37)

Measuring noise of a refrigerator unit



Engineers set up sound lab in Chicago's Loop to check noise



This echoless, noise-measuring room has walls of fiberglass



# "Bill X": Skilled Worker...Acute



Dr. A. J. Carlson, University of Chicago; J. H. Oughton, Jr., Keeley Institute Director; Dr. J. I. Norris, Eastman Kodak Co.; Dr. G. F. Lull, American Medical Association; attending First Industrial Conference on Alcoholism

BY JOE EGELHOF

**T**HERE is an old story about the woman who saw a drunk sleeping in the gutter next to a pig and remarked: "You can tell the man that boozes by the company he chooses." The porker, it is said, on hearing these immortal words got up and slowly walked away. That's the way they told it in the saloon-busting, quack-remedy days of 40 years ago. Some progressive industrial companies now have put a new twist on the old yarn. An alert personnel manager, instead of a feminist, came upon the snoozing pair. He commented, more elegantly, that "here is priceless human talent keeping company with almost-priceless pork chops."

So this wise personnel man hauled the alcoholic out to be rehabilitated and took the pig to the packinghouse.

Now blend in a case history right out of industry's records. While the squeamish pig starts his last mile, Bill X, erstwhile foreman at Y Company, is beginning a bright new journey to recovery from his disease. Y Company orders medical care for a case of acute intoxication and for any subsidiary ailments that may have developed from prolonged and intense use of alcohol. When comfortable and able to think clearly, an interviewer tells X to face the facts. He is not just "weak-willed" and the company knows it; he is suffering from a real disease.

Does he want to get out of debt, be reinstated in his job, and abstain from alcohol? He does, and has for a long time. So rehabilitation begins. Bill is introduced to a unit of Alcoholics Anonymous, perhaps comprised

of a group of his fellow workers at Y Company. Several months later, the personnel chief records that he has saved the company's investment in Bill X, and Bill himself can breathe the happiest "I'm free" in the world.

## "Or Else" Attitude Dropped

In the wave of understanding and concern about alcoholics that has swept the United States in this decade, industry is doing more than just temper its traditional "quit drinking or you're fired" attitude. Large industrial companies, the biggest money-losers, are taking over the campaign against alcoholism. Specialists long have argued that the logical first force for rehabilitation is the alcoholic's

## Alcoholic

employer. In today's lengthening list of companies engaged in rehabilitation work are such firms as Eastman Kodak Company, E. I. Du Pont de Nemours Company, Allis-Chalmers Manufacturing Company, Inland Steel Company, Acme Steel Company, Western Electric Company, and George A. Hormel and Company. Even the railroads, who naturally have some of the most rigid rules against drinking on or off the job, are interested in alcoholic rehabilitation programs.

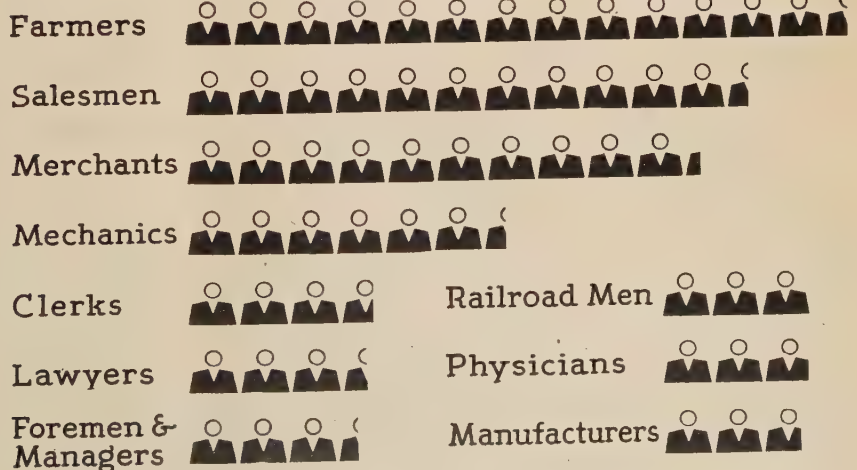
When a company has a successful program in operation, it is virtually certain that a local unit of Alcoholics Anonymous is working, unofficially but effectively, with the firm's personnel and medical staff.

The A. A.'s have a dramatic and well-publicized history. They now have over 50,000 members, mostly in the United States but also in Canada, Mexico, Cuba, Australia, Norway, England and Ireland. They began in June, 1935, when two recovered alcoholics, a New York financial man and an Akron physician, joined their moral forces to aid others. Growth was slow until the book "Alcoholics Anonymous" was published in 1939. Membership then soared from 400 to 10,000 in four years.

(Continued on page 24)

## ALCOHOLICS BY OCCUPATION

Each symbol = 100 alcoholics



Out of a total of 12,012 patients treated at Keeley Institute from 1930-1946 these 10 headed a list of 65 different occupations





Pouring pig aluminum in race to meet mounting demand

# Aluminum: Now You See It, Now You Don't

By LEWIS A. RILEY

**H**AD SOMEONE suggested three years ago that aluminum would become so scarce as to enter the gray market, he would have been adjudged—by a shift of the metaphor—deficient in gray matter. Aluminum came out of the war an elephantine industry, its ingot capacity swollen 700 per cent but its market shrunk at least two-thirds. Predictions were that the industry would require five years at the least to haul itself from

the sales void left by the collapsed aircraft market. Unbelievable as it would have seemed on V-J Day, aluminum is again scarce and likely to become more scarce in the months ahead.

Why? The answer lies in a chain of events which began 34 months ago when the aluminum industry, with most plants idle and shipments down 75 per cent, launched an aggressive campaign to capture new

peacetime markets. By 1948 the industry was well on the road to that goal. It had invaded the lucrative railroad, construction and automobile industries which helped send aluminum sales climbing back to a peacetime record of 2,000,000,000 pounds in 1947.

This snapback was accomplished while the aircraft market was dormant. Now that aviation demand has suddenly sprung to life the outlook for aluminum has changed even more drastically. A few months back the industry was striving to increase sales; today it is struggling to raise production to meet what is likely to become the greatest peacetime demand for aluminum in history.

The nation's five-year air force expansion program, requiring an estimated 40,000,000 pounds of aluminum this year and probably as much as 220,000,000 pounds by 1951, began at a time when new peacetime uses for aluminum had already created a tight market for the metal. Thus, the big plane building program is exerting a disproportionate squeeze on aluminum and is focusing renewed attention upon the spectacular gyrations of the light metal during recent years.

## Boom—Slump—Boom!

The fortunes of the aluminum industry have risen, fallen and risen again over the past decade. The cycles have been extreme and, with the exception of the postwar slump, wholly unpredictable. Back in 1939, before the industry received its tremendous war stimulus, aluminum production ranked substantially below that of the principal other non-ferrous metals. Copper output stood at 1.6 billion pounds; lead, 1.3 billion pounds; zinc, 1.9 billion pounds; and aluminum slightly under a third of a billion pounds. Since then, aluminum shipments have increased more than five-fold, a record unparalleled by any other non-ferrous metal.

Tonnage totals are not, however, an accurate index to the present day expansion of the aluminum industry. A pound of copper, for example, yields only 30 per cent as much sheet or rod as does a pound of aluminum. Measured in volumetric terms the light metal's growth has been even more spectacular. So measured, last year's aluminum shipments were double that of copper, three times that of zinc, almost four times that of lead, and virtually equal to the combined output of all three metals.

Today, more aluminum is being used in the auto and construction industries than ever before. Reynolds Metals Company, one of the industry's Big Three, calculates that the average new car used between 20 and 30



pounds of aluminum in 1947, as against 10 pounds before the war. This year, Reynolds figures, aluminum consumption by the auto industry may rise as high as 100 pounds a car with large quantities being used for sun visors, inner trim, instrument panels, hood panels and radiator plates.

With sheet steel critically scarce, the auto industry has been substituting aluminum alloy sheet and new varieties of embossed sheet. Aluminum manufacturers contend that embossed sheet provides built-in structural reinforcement enabling it to replace steel thickness-for-thickness with little or no loss of strength. Furthermore, they say, embossed patterns hide scratches and are especially adaptable for rough treatment items like running boards, door scuff plates and kick plates.

### Cheaper Auto Tags

In a related field, aluminum is hard set upon capturing the bulk of the license plate market. The talking point here is that non-rusting aluminum plates do not require background or backside painting, and thus afford a manufacturing economy of  $2\frac{1}{2}$  cents a set or \$75,000 annually for a state like California that distributes tags to around 3,000,000 motorists. Furthermore, the aluminum people contend, the light metal can save \$100,000 in mailing costs, giving it a distinct price advantage over steel.

In the construction field, the use of aluminum for heating and ventilating installations is estimated to have increased ten-fold in 1947. The year's output of 2,500,000 aluminum windows was 100 times greater than in any previous year. Farm equipment manufacturers are estimated to have used four times as much aluminum in 1947 as ever before and the Alumi-

num Company of America figures that half a million farm buildings were roofed with Alcoa aluminum last year. Furthermore, the light metal has made some inroads in the production of furnaces, stoves, water heaters, electric wire and cable, and textile equipment.

### Invades Railroad Field

Much of aluminum's postwar stimulus has come from the railroad car-building industry, which in 1947 consumed 20,000,000 pounds or more than was used in all the years before the war. Aluminum passenger car production has now reached the rate of 20 a week, a record that is particularly arresting when it is recalled that only 28 aluminum cars were manufactured throughout 1946.

Meanwhile a dozen roads are experimenting with aluminum hopper and tank cars. In the latter field, aluminum holds several advantages; it withstands chemicals like nitric acid which corrode carbon steel and, unlike steel, it does not discolor or contaminate nylon salts, acetic acid, glycerin and turpentine. Orders for 400 aluminum tank cars have been placed since the war, against a production of only 300 such cars in the 18 years between 1928 and 1945.

Price-wise, aluminum passenger cars run approximately eight per cent higher than steel cars and aluminum box cars and hoppers about 16 per cent ahead of their steel counterpart. But aluminum producers contend that higher initial costs are offset by added pay-

loads, cheaper maintenance and longer life for aluminum cars. To Western mountain-scaling roads like the Southern Pacific and the Union Pacific, which pioneered aluminum trains, weight is, of course, a vital consideration. Altogether, of the nearly 5,000 passenger cars awaiting delivery throughout the country, approximately 10 per cent are being made of aluminum.

The Pennsylvania Railroad's commuter-carrying subsidiary, the Long Island Railroad, is making a heavy investment in aluminum with 50 new double-decker 135-passenger aluminum cars now being built to augment its notoriously imperfect commuter service. The New York Central is experimenting with 22 all-aluminum coach-baggage cars. Each new car seats 48 and carries nine tons of baggage. The Illinois Central is giving aluminum a unique test in what the road aptly calls "Trailerail" conveyors. These are big aluminum shipping containers that can be shifted by built-in hydraulic lifts from truck trailer to flat car for rail haulage and then shifted back to a truck trailer for local delivery at destination. The transfer is made in a fraction of the time it would require to unload a truck and load a boxcar.

It would be idle, of course, to con-

(Continued on page 27)



Acme Photos

Aluminum captures new peacetime markets: Left: light freight cars towed by "jeep." Right: Aluminum in the home



# There's Pin Money In Your Waste

## *Postage Stamps Accumulated By The Bushel from Commercial Mail*

**T**HE mailrooms of most business concerns are humdrum, back-room premises that could hardly be called sources of adventure and hidden treasure. Yet to tens of thousands of avid stamp collectors, they are precisely that. They possess this unique attraction for the simple reason that a substantial portion of the postage stamps that are lodged in collectors' albums have originated in the otherwise prosaic mailrooms of manufacturers, banks, merchants and foreign traders.

To America's vast army of philatelists the mailroom of Montgomery Ward and Company, for example, would be especially fascinating. Wards, whose global operations attract a year-round stream of foreign mail, have accumulated as much as a ton of carefully preserved stamps in twelve months.

Abbott Laboratories, whose foreign offices are located in virtually every non-Soviet nation of the world, receives all branch correspondence by airmail, making its mailroom another fertile hunting ground for the collec-

tor. The annual stamp accumulations of several of the nation's leading banks are worth several thousands of dollars even in bulk lots which still require processing before they can be resold to collectors.

The average stamp collector pursues his hobby with the fervent hope that he will someday stumble upon a rarity like the British Guiana one-cent stamp of 1856, which brought \$29,000 at auction some years ago. While there is scarcely one chance in a million that similar curiosities will turn up on business mail, the very bulk and latent value of the stamps this mail produces have made business concerns fair game for enterprising company collectors, specialized outside dealers, and a variety of philanthropic organizations.

### **System Uncommon**

Most large companies, probably a majority, have no formal system for disposing of their incoming stamps and employees are thus free to churn through the mail like so many beachcombers searching the sands for valuables. Such informality has not always been for the best. When a dozen or so stamp collectors begin pawing over the morning mail, it takes on the aspects of a mailroom free-for-all and, as a result, many companies have humanely removed their stamps from the realm of in-

dividual initiative and placed them on a strictly business or a strictly philanthropic basis.

### **Basis of New Business**

This trend toward the systematic disposal of stamps is now booming the business of a curious school of merchants who make their living by dealing exclusively in the bulk stamp accumulations of business concerns. In Chicago, for example, there are probably 500 professional and semi-pro stamp dealers, but less than a half dozen specialize in bulk lots alone. Typical of the latter is Walter N. Emerson, who after hobbying in philately for exactly half a century now receives foreign stamps from 30 or more companies scattered across the country. In a busy month, they are likely to channel as many as 50,000 stamps in unsorted conglomerations into his tiny Loop office.

Emerson has sold his clients on the idea that stamps, while not a source of extensive untapped capital, can at least be converted into added revenue of more than penny-ante value. This may be especially true, he maintains, in the case of companies in middle and lower profit brackets. A cooperating company may send Emerson a trial accumulation of foreign stamps, provided it is "unmilked" — which in trade jargon is another way of saying

Robert Young plugs veterans' stamp drive



Stamps For the Wounded volunteers sort company-accumulated stamps to be sent to . . .





# Basket . . . Maybe!

## May Contain Valuable Collector's Items

It is a virgin collection untouched by company collectors.

Clients are promised a minimum of \$5 for each 1,000 stamps in the first lot and more if its mail produces a really promising assortment. From these conglomerations, Emerson will sift out the worthwhile stamps, probably not more than 15 per cent of the lot, and resell the residue at a loss to dealers who market pound-lots of non-descript stamps that are of little value except to begin a collection.

### Foreign Stamps Valuable

Some concerns, whose foreign mail provides a sprinkling of quality stamps, average a return of perhaps one and a half to two cents a stamp, which in terms of thousands can run up to a fairly tidy sum. Right now, many companies dealing with Latin America are receiving a new eight-cent Cuban airmail stamp. Emerson will collect ten such stamps from company accumulations and sell them to a retailer for 20 cents. The latter in turn will sell the same stamps to collectors for probably five cents each representing a markup of 150 per cent. Markups, incidentally, that would appear unscrupulously high elsewhere are accepted as wholly legitimate in the peculiar economics of stamps merchandising.

There is, of course, plenty of brisk

competition for company-accumulated stamps, the chief reason being that companies constantly acquire new issues of stamps before they become plentiful in normal stamp trading channels. Established stamp houses acquire bulk quantities of stamps directly from foreign countries, but this is a slow process and wholesale collections are usually six months to two years behind the current issues. Companies, on the other hand, are likely to begin receiving new issues, of which there are 1,500 or more a year worldwide, a few days after the initial printing.

Emerson's clients range from banks to small export-import houses. In seeking new business he emphasizes that selling stamps to him or to other wholesalers requires little or no effort on the company's part. Furthermore, some clients have been sold on the engaging idea that the extra change can be turned over to employe welfare. Some concerns do, in fact, receive sufficient extra revenue from their stamps to finance employe parties and picnics several times a year.

While Emerson deals exclusively in bulk lots of foreign stamps, another Chicago stamp house has devised what is perhaps an even more ingenious company-cooperation scheme involving domestic stamps. Stamp Auction Service concentrates on companies

with extensive domestic correspondence. To participating firms, the stamp house will recommend specific United States stamps — commemoratives, limited issues, etc. — for use in correspondence between domestic branch offices.

Through this "controlled mail" device, Stamp Auction Service assures a client that selected stamps will have a substantial value even after cancellation, provided, of course, the bulk collections are forwarded for processing and re-sale. At the moment, the stamp house is recommending a special philatelic bargain: a historic set of five and ten cent stamps reproduced on gummed mailing stickers and re-issued by the Post Office Department in commemoration of the one-hundredth anniversary of the use of postage stamps in this country. Used stamps of this variety are worth up to 33 per cent of their original value, a fact that obviously may mean a striking economy in a company's outlay for postage. By using other and more common commemoratives, Stamp Auction Service contends that a company may normally save up to 10 or 15 per cent on postage.

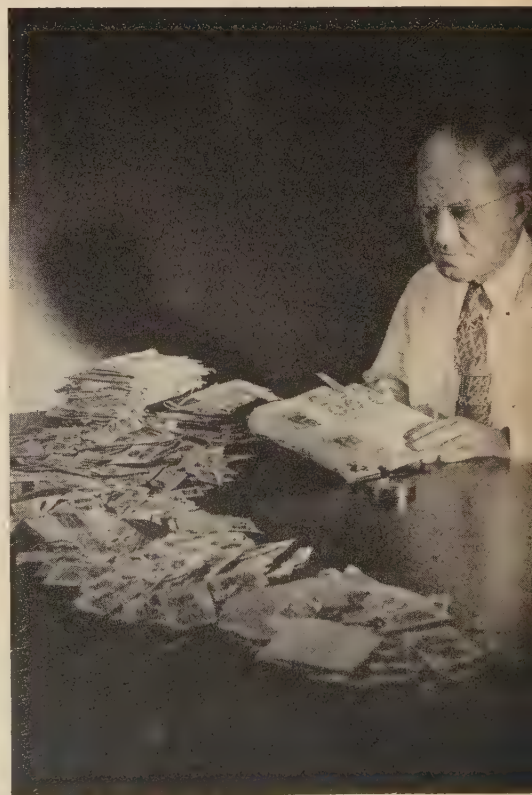
### I. H. Gives Stamps to Vets

International Harvester Company is among another group of concerns which shy away from any commercialism in the disposition of their stamps. Since 1942, International Harvester has donated its foreign

(Continued on page 46)

Sorting stamps at International Harvester

Hospitalized naval veterans who search through donations with keen enthusiasm







Indiana Steel Products Co. Photos

Permanent magnets are made in thousands of shapes and sizes

# Practical Magic With Magnets

**T**IRELESS little workers that need no supervision, cost nothing to operate, and will be just as energetic a hundred years from now as they are today, are being used to perform a rapidly increasing number of jobs in industry and the home. These remarkable workers are permanent magnets with tremendously increased power derived from new alloys developed in the last few years.

As the name implies, permanent magnets are metal pieces that have been

By **DANIEL F. NICHOLSON**

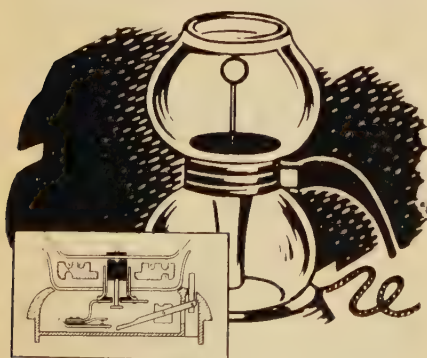
permanent magnets to work in countless new ways: some spectacular, others unspectacular but nonetheless labor-saving. The fact that a single B-29 Superfortress utilizes more than 300 permanent magnets gives some idea of their importance to modern engineering.

A short time ago General Electric developed a watt-hour meter that practically eliminates friction, the greatest factor in maintenance expense in these constantly-rotating devices. The conventional watt-hour meter uses jewel bearings, but in the new meter the moving shaft and disk are suspended or "floated" by means of magnetic repulsion. Other magnets control the thrust created when the disk and shaft revolve. As a result, friction is never more than 100 pounds to the square inch as compared with 100 tons in the conventional meter.

Wherever materials are handled in large quantities, magnets are being used to pick out the strange assortment of "tramp" iron that inevitably gets into places where it does not belong. Canning factories retrieve knives, screwdrivers, wire, and a miscellaneous assortment of metal items

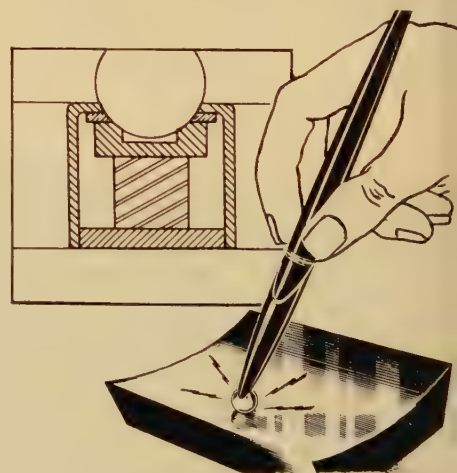
that inadvertently fall into the production line and would cause serious trouble if not discovered in time.

In grain mills, textile plants, foundries, and cement mills, magnets snare tramp iron before it can corrupt the



Tiny magnet controls coffee maker

given a magnetic charge that lasts indefinitely. No scientist can explain exactly what magnetism is, yet today magnets have revolutionized the design of meters, instruments, generators, and radios. Industry is putting perma-



Magnetized base allows pen holder to pivot

final product or damage cutting knives and costly gears. Magnets snatch out chunks of iron from coal before they can wreck delicate stoker mechanisms. The ceramics industry uses the tireless magnet to remove minute quantities of metal that would create imperfections. Producers of lubricants clean out abrasive metal



articles by passing the liquid through a series of magnetized baffles. In machine shops the liquid coolant can thus be used and reused with complete safety.

The magnet accomplishes these jobs with amazing simplicity. A magnetized pulley on a conveyor system, for example, will hold extraneous metal materials while the cement, coal, or what not flows into a container or onto another conveyor. The tramp iron goes around to the underside of the pulley, then drops off as it moves away from the magnetic force.

In many instances permanent magnets are replacing electro-magnets. The latter is a magnet only so long as a current of electricity provides it energy. The advantages of the permanent magnet are obvious. It is more dependable because it does not require outside power; it is more economical, it does not generate heat, there is no danger of electric shock; and there is no danger of creating a spark that would set off a fire or explosion.

### New Printing Technique

The Chicago printers' strike has placed newspaper publishers under severe handicaps but it has also produced many ingenious developments that have made publication possible without the help of printers. One of the newest is the use of paper coated on the back with fine powdered iron. Classified advertisements of two newspapers are typed on this paper and placed on a magnetized metal plate. When one of these small ads is to be removed, it is simply lifted off the plate, and other ads are shifted with ease. No pasting or re-typing is necessary. Magnetic coated paper tape has also proved successful as a recording device similar to the wire recorder.

Many offices now use new metal bulletin boards that employ tiny magnets in place of the elusive thumb tack. A magnet or two holds a sheet of paper firmly against the board. Similarly, magnets enable the plant foreman to place signs or bulletins almost anywhere, even on individual machines.

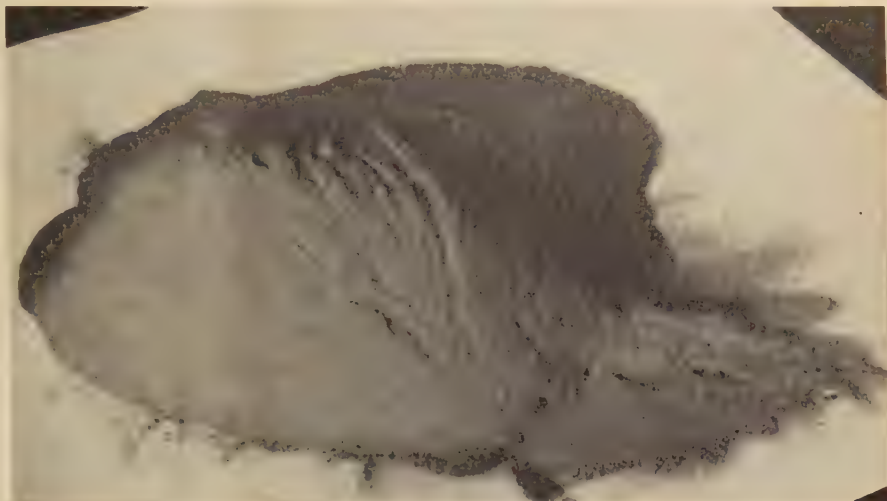
Many practical home and personal uses are being found for permanent magnets. The manufacturer of a prefabricated house with steel walls is figuring on magnets to support drapes and pictures. Flapping shower curtains can be held securely against the side of the tub by means of magnets sewed into the hem. The heart of the automatic vacuum-type coffee maker is a curious little permanent magnet that breaks the electric cur-

rent at the precise moment the coffee is ready. A new kitchen tool that avoids bobbing in the chile con carne is a magnetized can opener that prevents the top of a can from falling in when it is cut open. Magnetic knife holders are another unique implement. Press the knife against the holder and it stays there. Magnetic tool holders are equally convenient for basement workshops.

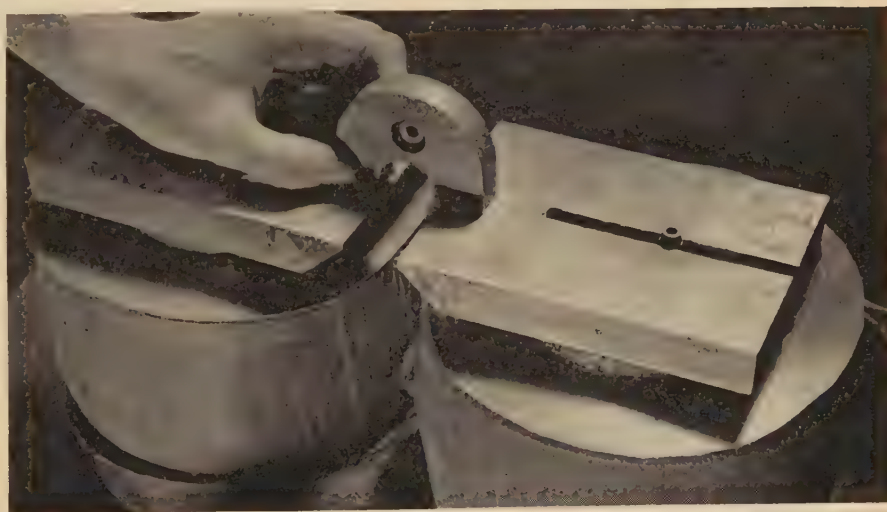
Fountain pen owners who have been exasperated with caps that become unscrewed in the pocket — sometimes with disastrous results — can now prevent this annoyance by using new-type pens that have a tiny magnet in the cap. Motorists who fumble for cigarets can "nail" their packs to the metal dashboard with a tiny magnet slipped inside the cello-

(Continued on page 33)

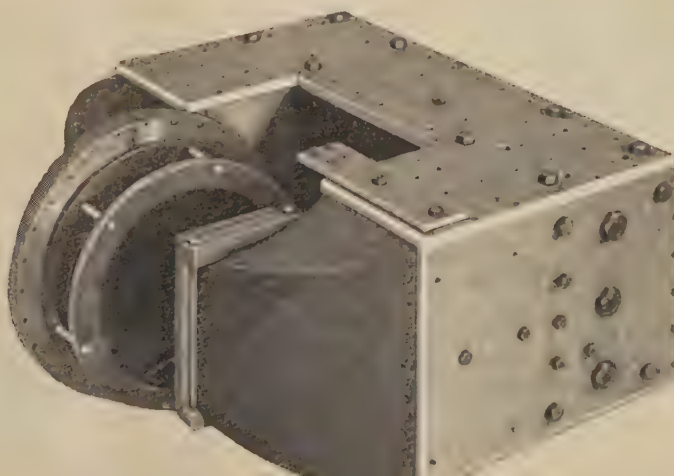
In sintering process, powdered ingredients (below) are pressed into die shapes



Below: Magnetizing a U-shaped piece in the field of an electro-magnet



Below: Strongest permanent magnet ever produced; used in cosmic ray research





# The New Draft And Manpower

*Few Will Be Drafted But Job Deferrals Will Be Tight*

**I**NDUSTRY this month will begin watching a re-showing of a familiar page of history. The principal characters in the nation's second "peacetime" draft will be new. The dialogue, however, will involve remembered phrases like occupational deferment, re-employment obligations, essential personnel, and physical disqualifications.

There has been a tendency to minimize the impact of the draft upon industry, to regard it primarily as a call-up of stockroom boys, drug store clerks, and other less-essential members of the labor force. It is not as insignificant as all this. For one thing, the services require about 900,000 men to bring them to authorized strength (they expect to get the first quarter-million by July 1, 1949) and in today's tight manpower market this drain of young men will be felt very early.

## Reduce Unemployed

Furthermore, a loss of nearly one million men would slice unemployment rolls by about one-half. Hence, what are now shortages of some types of unskilled labor will become critical scarcities as the tempo of the draft speeds up. The average employer may, of course, lose only a few of the younger members of his organization, but the big job will be to replace even these men as the manpower supply shrinks.

There are several more facts which make the draft of more than passing interest to business. It should be noted that the patterns set by the 1948 selective service act are likely to be followed should the international sit-



World War II scene to be repeated

uation become further aggravated and the services increase their manpower requirements. Employers again confront much the same re-employment obligations they did during and after the war. Also, they must again determine their deferment policy with regard to "necessary" personnel and those trained in "essential" scientific and engineering fields.

Businessmen, especially those in direct charge of personnel, would be wise to follow the operations of the draft closely, for the experience learned this year may be of vital importance next year and during the years thereafter. The salient facts of the 1948 draft act are set forth below:

### Who must register?

All men 18 through 25, no exceptions; subsequently all younger men upon reaching their eighteenth birthday. Selective service asks employers to allow time off with pay for registration.

### Who must serve?

Every qualified man, 19 through 25 years, unless deferred or exempted as indicated below or, under certain circumstances, unless an alien resident. Selectees must serve 21 months; men between 19 and 26, not yet called for induction, may volunteer for 21 months service; 18 and 19-

year-olds may volunteer for one year of service.

### Who is deferred?

To be determined by local draft boards subject to appeal. Possibilities include those in "industry, agriculture, or other occupations" deemed necessary to national health, safety, or interest, plus those whose

study or research in medical, scientific and other fields is similarly essential. (Although not specified by law, it is a virtual certainty that draft boards will insist that such men also be irreplaceable; hence, decidedly few occupational deferments.) Public officials, ministers, religious students, high school and college students (for a limited time), and married men living with dependents may be deferred.

### Veteran Status

Previous military service will exclude veterans who served at least one year between September 16, 1940 and June 24, 1948 or more than 90-days between December 7, 1941 and September 2, 1945 in U. S. or allied forces, plus those who complete three years service in the armed forces after June 24, 1948. Veterans with less than 90-days service between December 7, 1941 and September 2, 1945 but with more than 90-days but less than one year service between September 16, 1940 and June 24, 1948 are exempt, except in case of war, if they are in reserve components or in localities where no component is available.

Also exempted are members of the National Guard, Air National Guard, Officer's Reserve Corps, Enlisted Reserve and Naval Reserve, plus men

(Continued on page 45)



# Chicago's State Street . . . "Main Street" of America



**H**ERE IN CHICAGO—on a grand scale and in heightened tempo—is every Main Street in America.

Along State Street's mighty mile are 1000 acres of retail floors—the greatest concentration of retail selling space in the world.

Here 20,000 manufacturers—American, European, Latin-American and Asians—offering everything from pins and playsuits to artichokes and airplanes, feel the turbulent pulse of retail America each working day.

At this birthplace of the American department store, manufacturers of retail goods have for many decades evaluated consumer recognition and acceptance immediately and in certain terms.

State and Madison is the world's busiest shopping corner. A daily average of 450,000 customers throngs the sidewalks, aisles and escalators of the huge department stores of these nine dynamic blocks, accounting for 60 per cent of Chicago's department store sales,

which amounted to 326 million dollars in 1947. The remaining 40 per cent of the sales are made in 75 important community shopping centers which fan from State Street to the city limits and into the surrounding residential suburbs.

If a "better mousetrap" can be sold anywhere, it can be sold in Chicago. Within the immediate trading area are 5,314,000 persons. Seven million consumers within a 100-mile radius consider Chicago their market. There are ten million persons within 150 miles—sixty million within 500 miles—and untold thousands who annually vacation in the area to enjoy its many cultural and recreational features.

State Street is more than an expression of the vitality, wealth and aggressiveness of Chicago and Northern Illinois, even more than a thousand "test markets" in one. It is itself a tremendous and typical marketplace for goods from everywhere in America and the entire world.

*This is one of a series of advertisements on the industrial, agricultural, residential and cultural characteristics of Chicago and Northern Illinois*

## TERRITORIAL INFORMATION DEPARTMENT

Marquette Building—140 South Dearborn Street, Chicago 3, Illinois—Phone RANdolph 1617

**COMMONWEALTH EDISON COMPANY • PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS**  
**WESTERN UNITED GAS AND ELECTRIC COMPANY • ILLINOIS NORTHERN UTILITIES COMPANY**



## "Bill X": Skilled Worker . . . Acute Alcoholic

(Continued from page 15)

Dr. G. H. Gehrman, medical director for Du Pont, says bluntly that before the A. A.'s arrived, the problem of proper management of the alcoholic was almost hopeless.

Almost unbelievable estimates have been made of the cost of alcoholism to industry. Who knows how many executives, supervisors and workers have been fired for "problem drinking?" How much production has been lost to companies and customers because of sloppy work, hangovers and absenteeism? At the First Industrial Conference on Alcoholism this year it was estimated there are at least 3,000,000 alcoholics in the United States, or roughly three per cent of the non-juvenile population. About 1,300,000 are regularly employed. Roughly 85 per cent of the working alcoholics are men and 15 per cent women. Each regularly employed alcoholic is estimated to lose an average of 22 days a year from his job.

The total loss thus is an amazing 28,600,000 work days. This does not take into account the non-productive time of the 2,200,000 unemployed alcoholics or the additional heavy loss from hangovers. Reliable specialists actually have estimated the cost of

alcoholism to business at about \$1,000,000,000 a year.

Here are a few random examples that came up in talk at industry's first conference on how to lick alcoholism. It's difficult to penetrate alcoholic alibis, but one plant employing 15,000 pinned down 2.63 per cent of its employees who lost 2,687 days because of actual drinking or disciplinary action. One industrial official conceded that "several thousand dollars has been paid in sick allowances alone in the past year to a 25-year member of our supervisory force who has been hospitalized now for nearly four months." An office clerk with more than 20 years service was late 25 times in one year and lost 619 hours because of "sickness." Another supervisor this year lost 4½ weeks in three months. Last year he was late 30 times and lost two weeks without permission and six weeks during three periods of "sickness."

### Succeed With 70%

The remedies for this industry-wide disease can't be documented so thoroughly. Acme Steel, for example, is proud to tell how 70 per cent of its rehabilitation efforts have been successful in the four years it has

had a program to combat alcoholism among employees. But personnel manager of the steel firm point out that "each case is different and must be handled differently." In its simplest terms they add, the tasking is one of interviewing the alcoholic and "selling him on going into A. A."

Such a simple method now has become the most successful means ever devised to battle alcohol addiction, an age-old problem. Employers' problems with salaried and hourly paid alcoholics are reliably reported to have begun shortly after man discovered fermented grape juice. Up to a few years ago, the ultimate "solution" regarded as ideal by bosses in all organizations has been a talk like this (quoting Dr. John L. Norris, of Eastman Kodak's medical department in a play-acting mood):

"Bill — you're fired! Your work during the last three years has been sloppy. Your attitude is hopeless. Your attendance at work has been completely undependable. Several times recently you've been drinking on the job and Tuesday noon of this week when you finally did show up you were so drunk the guard at the gate wouldn't let you in. We've been patient this long because you've been with us 13 years. As a young man you had real promise. You grew fast, were an accurate and fast worker and high school graduate

## "Overnight Delivery

via

**CAPITAL  
AIRFREIGHT**



... means Quicker Profits"  
says **CANNON SHOE CO.**

"For example, we fill in shoe sizes and styles for our Detroit retail outlet overnight via Capital Airfreight — resulting in quicker turnover of a carefully planned inventory and that's the way to profit-merchandising!" says Fred G. Stroh, Traffic Manager, Cannon Shoe Company, Baltimore, Md.

Yes, fast Capital AIRFREIGHT helps Cannon Shoe Company reduce markdowns, operate with smaller inventories, turn stock faster, control prices, cut warehousing and storage costs, and thus keep profits up! Why not find out how Capital AIRFREIGHT can help you? Call your Capital Representative or write to:

National Airport  
Washington 1, D.C.

**Capital**  
AIRLINES

SERVING 70 IMPORTANT CENTERS OF COMMERCE, INDUSTRY AND RECREATION



were given charge of a growing department where you had the respect and liking of several college graduates working under your direction. But you've gone completely to pieces and we can't be patient any longer. During the last six months of last year you were absent from work eight weeks. To date this year you have been at work less than half the time. We can't run a business that way."

That employer was desperate, and indeed the entire human race has been desperate for a cure for alcoholism ever since the plague began. "Cures" without number have failed—ranging from the raw cabbage advocated by the ancient Romans to the "put it in his coffee" quackery of the '90s, and the more recent device of legislating alcoholic beverages off the market. It took medical men a long time to make a clear distinction between the three problems arising from alcohol—acute intoxication, the physical ailments that follow prolonged and excessive use, and alcohol addiction.

#### Physical Repairs Not Enough

The toxic effects can be dried out of the alcoholic carefully, and the pains of the deficiency diseases can be relieved through the administration of vitamins, insulin, glucose and carbon dioxide treatments, but the basic job of enabling him to live without alcohol still remains. Some spectacular cure may eventually be discovered but, according to Yale University's Dr. E. M. Jellinek, "the physiological aspects of alcohol addiction are not yet sufficiently known to enable one to make a moderate drinker out of an addict." Research now is going on at several laboratories to find out more about the physiological factors and if it's successful, Dr. Jellinek says, "the treatment of alcohol addiction may be placed on an entirely different basis." But at present the main remedial factor is group psychotherapy.

The A. A.'s fit into the present "cure" situation perfectly. They insist on complete abstinence and consider it beyond all question that a rehabilitated alcoholic can never again be a "social drinker." Their basic concept is that alcoholism is a disease. And their godfatherly help in persuading the alcoholic to make up his own mind that he wants rehabilitation, and then in helping him keep his resolve, exemplifies some of the most modern methods for treatment and re-education of persons with psychological problems.

Getting the alcoholic to want rehabilitation is a crucial point, but even if he has gone so far as to have no interest in recovery or actually to

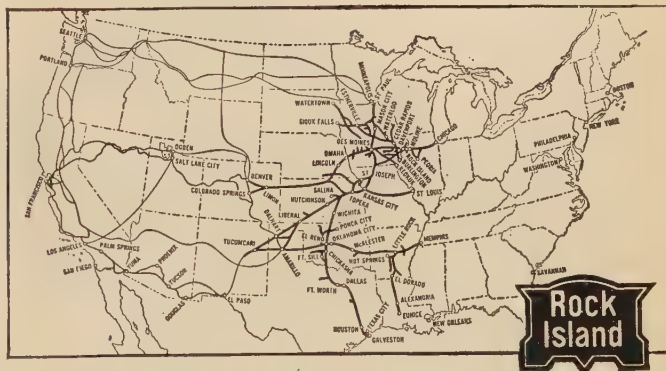
# Full speed ahead!



## ROCK ISLAND ENTERS ITS SECOND DECADE OF PLANNED PROGRESS...

### ... with a large fleet of Diesel-powered "Rocket Freights"

Increasing numbers of shippers throughout America are relying on Rock Island's fast, efficient freight service. Huge Diesel locomotives haul mile-long freight trains at express speeds. More than 23,000 Rock Island "package cars" annually give through service to L.C.L. shipments. Rock Island has 272 Freight Representatives, whose experience totals more than 3,600 years, strategically located in 71 cities. They are experts on packaging, marking and stowing methods, and on rates and routes.



### ... with 8000 miles of modern right-of-way in Mid-America

More than *fifty million dollars* have been invested by Rock Island during the past ten years in improving its right-of-way through 14 states. Curves have been straightened. Grades have been reduced. 1333 bridges have been built or rebuilt. Stations have been built or remodeled. Centralized traffic control and short wave radio have been installed. In short, Rock Island today is among the nation's leaders in modern freight and passenger service.

Visit beautiful "Rocket Village"—  
the Rock Island Exhibit at  
THE CHICAGO RAILROAD FAIR

# ROCK ISLAND LINES

Route of the Rockets



desire that his disease continue, the men who are fighting alcoholism don't give up. In such a case, they recommend psychiatric treatment to remedy the deeper disorders.

Practically all of industry's most successful programs count on the A. A.'s. Du Pont, for example, is hoping to get A. A. units set up near all of its plants. There now are nine such groups near Du Pont establishments, and they have been successful with 65 per cent of the alcoholics who joined them. Just how do the A. A.'s work with the company? The answer is, they work hard and on a not-for-profit basis. The A. A.'s are not so anonymous that a person can't find out where and how they're operating (a wag once remarked that those A. A.'s are about "as anonymous as the New York Yankees"). In fact, the organization maintains offices in

principal cities, which are listed in local telephone books.

Here is how Eastman Kodak's Dr. Norris got his first look at the A. A.'s and his first idea of what they could do for his company and industry generally.

#### A A Discovered

One of his "problems," Dr. Norris relates, given a final warning to stop drinking, dropped in one day a few years ago and left a pamphlet about Alcoholics Anonymous on the doctor's desk. Over the next few weeks this employe lost his stomach trouble and his jitters. Then he told the doctor he had stopped drinking and had not had a drink since.

Shortly after, Dr. Norris was trying to help another man who was taxing the patience of his supervisor and the industrial relations depart-

ment. After one interview, where the nature of the alcoholic's physical and mental problems was explained for hours, Dr. Norris happened to give him the pamphlet left behind by the first alcoholic. Two weeks later, the second man was fired and the doctor counted him as another failure. But here's the rest of the story as the Eastman Kodak specialist tells it:

"Months later my phone rang, and a voice said, 'This is Bob C. at the plant. I am an A. A. I have been working with your patient, Bill, for the last few days. I don't think he is ready to accept the whole program yet, but he's dry now, and I think will be in on Monday.'

"Bill came to work on Monday — very quiet — rather reserved in his comments about himself, his job, and his recent contacts with A. A. However, after a conference with his supervisor, he was given another — his last — chance. Three weeks later he slipped and was discharged from his department. Another failure! But he had made a contact in A. A. After a week in the hospital where he was visited by A. A. members, he went to work in a canning factory. Each month for six months he reported to me and told me of his progress at home, on the job, and in A. A. At the end of that time, he was reinstated in his old job. Six months later he stopped at the office and said, 'It's a year, doctor, since I've had a drink. I am really free.' His home had been re-established, his debts paid, the respect and confidence of his supervisor and fellow workers were again his. That was two years ago."

#### A Practical Matter

Despite the heart-warming effect of such case histories as Bill's, the men operating industrial programs for rehabilitation of alcoholic employes insist that they be viewed on a dollar-and-cents basis. Recovery of the company's human investment was the theme of the Chicago conference on industrial alcoholism, where the dollar-and-cents needs, incidentally, were taken care of by James H. Oughton, Jr., co-director of the Keeley Institute of Dwight, Ill. Mr. Oughton follows his grandfather and father in the job of directing alcoholic rehabilitation. It is his firm belief that the rehabilitated alcoholic is not only a normal employe, but one better than average. Just read this letter one recovered alcohol problem sent to a company official:

"I am an alcoholic, a member of A.A. for the past four years. . . . How wonderful it would be if all my fellow-workers could learn to see

**UNEXCELLED**

*for preparation*



*by Peabody*

Shaft mined from both 5th and 6th veins in the high quality southern Illinois district . . . master refined by the 7-step S-P method to a fixed percentage of improved quality. 100% water washed. Stoker sizes assembled mechanically and automatically so uniformity is precise. Each car check-tested by mine laboratories.

**PEABODY COAL COMPANY**

*Established 1883*

231 SOUTH LASALLE STREET

CHICAGO 4, ILLINOIS

*Sales Offices*

Springfield • St. Louis • Omaha • Minneapolis • Cincinnati • New York



life as I am seeing it. About one-half of the fellows I work with seem to think their job is something pushed on them by the supervisor above them; and that the supervisors are the ones that reap all the benefits from their efforts. . . . If they could only understand that they are gaining just as much as the fellow above them by doing their work willingly and correctly, the worker would be much happier at his work. . . . In any case when I obtained my peace of mind, I began to have a much better understanding of my fellow men. . . ."

Is there a company in the United States that couldn't benefit from employing an alcoholic like that?

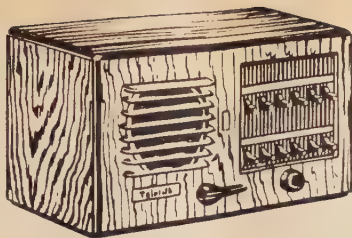
## Aluminum

(Continued from page 17)

tend that aluminum has made these postwar strides purely on the basis of aggressive salesmanship and product superiority. Although the industry has displayed a high degree of resourcefulness and enterprise in its battle for expanded peacetime markets, aluminum's success story would hardly have been as notable had steel been readily available since the war. Aluminum's invasion of scores of lucrative metal markets has thus far caused little anxiety among steel men. In the railroad industry, for example, the steel makers are hardly alarmed over the 20,000,000 pounds of aluminum that went into freight and passenger car production last year. While aluminum was gnawing at the fringes of this vast market, its elder competitor was channelling 10,000,000,000 pounds of steel — 500 times the amount of aluminum — into the car-building shops of its traditional customers.

Nor is the steel industry perceptibly concerned at aluminum's inroads into the construction and automobile industry. The essence of steel's reasoning, while never formally spelled out, is simply this: aluminum has not yet proved itself in its recently entered markets. It has not yet faced a real competitive test against steel, nor is it likely to face one in the near future. Instead, the chances are both metals will continue more or less scarce for perhaps five or even 10 years and, until both become readily available, a real competitive test will not develop.

While aluminum manufacturers express confidence that they will retain most of the markets they have captured since the war, steel men are not so sure. The latter see a large and growing peacetime market for aluminum but chiefly as a collateral metal of limited application. As one steel



My boss is  
human again!  
No shouting  
since <sup>WEBSTER ELECTRIC</sup> Teletalk

YES, TELETALK NOT ONLY SMOOTHES TEMPERS, BUT OFFICE ROUTINE, TOO! Think of the time you save by flipping a switch when you want to talk to someone in the shop, or in another office. No running from one place to another - no switchboard tied up. It's the modern way to run modern business! Teletalk is the finest inter-office communication system available. You should get only the best for your office!



## EMPIRE

INTERCOMMUNICATION & PAGING  
SYSTEMS-OFFICE & FACTORY MUSIC  
Engineered, installed, maintained  
SOLD or RENTED



### EMPIRE SOUND SERVICE INCORPORATED

Division of Empire Cooler Service, Inc.

618-26 W. Jackson Blvd.

CHICAGO 6, ILLINOIS

RANdolph 0405

It takes **More** than a desk to make  
an office!



Your desk is the focal point of your office, of course . . . and SPAK & NATOVICH offers the finest lines available. But an efficient business also hinges upon the functional uses of furniture, equipment, accessories.

SPAK & NATOVICH provides

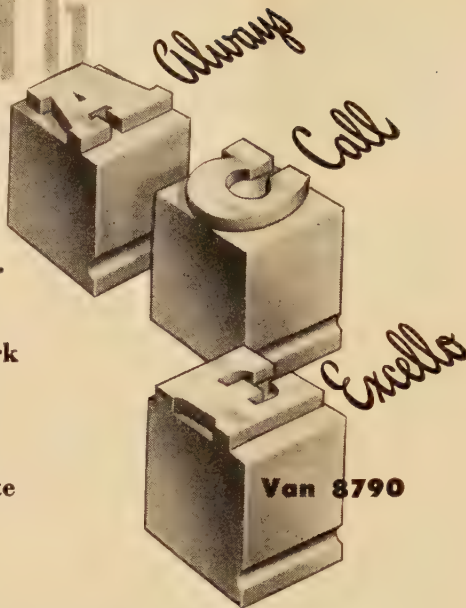
an office planning service to help you select the right furniture and equipment for your particular needs. Whether your offices are elaborate or modest . . . your budget large or small . . . our three spacious floors of displays hold the answer to your requirements.

*Distinctive office furniture and appointments since 1924*  
**SPAK & NATOVICH, INC.**  
30 S. WELLS STREET CHICAGO 6, ILLINOIS



# PRINTING

...for **E**xcello provides the "know how" to assist you in organizing your art and copy ... determining your method of printing ... producing your work economically and quickly. Publications, catalogs, booklets, direct mail from black and white to full color ... Now over one million impressions a day.



WRITE US ON YOUR COMPANY  
LETTERHEAD FOR A SUPPLY  
OF THESE FREE, PERSONALIZED  
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LITHOGRAPHERS • PRINTERS • BINDERS  
400 NO. HOMAN AVENUE, CHICAGO 24, ILL.

### MARSH & McLENNAN INCORPORATED

*Insurance Brokers*

ACTUARIES AND  
AVERAGE ADJUSTERS

Chicago	New York	San Francisco	Detroit
Washington	Pittsburgh	Minneapolis	Boston
Buffalo	Cleveland	Columbus	Indianapolis
Superior	Duluth	St. Paul	St. Louis
Los Angeles	Phoenix	Seattle	Portland
Vancouver	Montreal	Havana	London

expert puts it, "I do not believe aluminum will take a significant percentage of the market away from steel. At the same time, however, it is quite possible that aluminum will go on expanding because our growing population is demanding more and more of both metals."

Furthermore, steel people point out there will be many other important considerations for metal fabricators when both steel and aluminum become plentiful. There is the question of whether concerns long accustomed to fabricating steel will undertake to train skilled workers in the handling of aluminum as well. Also, there is the question whether companies will prefer aluminum to the point of supporting dual inventories and a multiplicity of fabricating machinery for both metals.

#### Electric Power Problem

In straining to supply both the aircraft industry and its newer post-war customers the big problem for aluminum manufacturers is getting cheap electric power. The industry is one of the nation's largest consumers of electricity, using about 10 kilowatt hours to produce one pound of metal. During the war, with cost a minor consideration, the industry was able to swell its output to nearly two and one-half billion pounds annually by utilizing reduction plants that are uneconomical in peacetime. Present aluminum production is based almost entirely on cheap hydroelectric power. Hence, although the industry is for all practical purposes very near capacity production, there are still idle war plants that lack an adequate power supply or to which electricity can be supplied only at prohibitive cost.

Whether idle capacity will be brought into operation now that the nation's defense program is getting under way is a major question mark.

Meanwhile, several other factors are heightening the current aluminum shortage. The government's 372,000,000-pound stockpile of pig aluminum, which last year enabled the industry to ship more than it produced, has been exhausted. Furthermore, most of the war-accumulated scrap, which provided roughly 500,000,000 pounds of secondary aluminum in 1947, has been used up and, today scrap is critically scarce.

Therefore, despite the probability of an increase in primary aluminum production during the last half of 1948, demand is likely to edge still further away from supply. And, with the market becoming steadily tighter, air force requirements—though modest of themselves—are likely to begin squeezing less-essential aluminum users still more before the year is out.



## Trends In Finance and Business

(Continued from page 10)

The above recommendations are among 12 suggestions of the committee which may receive legislative consideration early next year.

« « » »

### Farm Boom Has Defied Predictions

Since the commodity markets took a downward turn early this year, a number of economists have been saying that the farmers' big prosperity boom is on the verge of collapsing. The Department of Commerce, however, is anything but bearish in its outlook for continued farm prosperity. For one thing, the department notes, the basic forces sustaining farm income have actually been stronger so far in 1948 than during the corresponding period of 1947. Furthermore, cash farm income has averaged about five per cent higher during the first half of this year.

The department concedes that the export demand for food has fallen off from the extraordinarily high 1947 level, but domestic demand has stepped up sufficiently to offset this drop.

The department believes consumers are still allotting a large portion of their disposable incomes to food purchases. Though sales of apparel and semiluxuries like jewelry and entertainment have lagged recently, people generally have not restricted their indulgence in today's one true luxury—eating.

« « » »

### Alcoholism Costs A State More Than Taxes

How much does alcoholism (See "Bill X: Skilled Worker . . . Acute Alcoholic" page 15) cost a typical community? Massachusetts set out to determine the actual dollars-and-cents cost of drunkenness some months ago and the findings of a Governor's Commission, recently published, are thought-provoking.

The commission found that beverage taxes collected by the state paid only about 12 per cent of the tax and industrial losses caused by alcoholism. Among these were listed industrial accidents, highway accidents, absenteeism, the care of mental patients whose illnesses were caused by alcoholism, crimes committed while the offender was under the influence of alcohol, and state support of alcoholics and their dependents.

The commission placed tangible costs at \$61,000,000 (\$4,000,000 for mental patients, \$6,000,000 for crimes, and \$51,000,000 for support). The estimated cost of absenteeism, industrial and highway accidents, was placed at \$46,000,000, for a rough over-all total of \$107,500,000. From beverage taxes Massachusetts received only a scant \$13,000,000 in 1943.

# TCA



## "AIRCARGO"

Trans-Canada's "Aircargo" service has now been extended to Boston, New York, Cleveland and Chicago. These are the first United States links with T.C.A.'s Canadian coast-to-coast, Newfoundland and Trans-Atlantic "Aircargo" services.

For quick-reference tariff and complete information, write or call your T.C.A. "Aircargo" office.

75 East Monroe Street, Chicago, Ill.

Phone DEArborn 5805

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Reviews of Middle-western Companies

AT SOME future time, the enormous demand for the products of American farms will decline. The nations of Europe and other continents will have recovered their pre-war agricultural production, or perhaps surpassed it with the help of mechanization, and they will no longer be dependent on the United States for a large part of their foodstuffs as they now are. When this comes about there will be a condition of overproduction in American farm products, and the farmer's reduced purchasing power will be reflected in curtailed purchases of farm equipment.

This is the appraisal of the farm outlook, and of the prospect for farm equipment manufacturers, made by Alva W. Phelps, president of the Oliver Corporation, one of the nation's pioneers in the farm equipment industry. Just when agricultural overproduction will become a reality is not prophesied by Mr. Phelps. Nor does he attempt to assess the importance of such factors as government subsidies for farmers, the effect of the Marshall Plan on the ability of farmers in other countries to purchase American equipment, and the continuing trend toward mechanization of agriculture.

The attitude of Oliver Corporation toward the future is anything but defeatist. It is recognized that when the purchasing power of farmers is curtailed, demand for the output of the greatly expanded farm equipment industry will be affected, perhaps drastically. Oliver Corporation is girding itself in every possible way to assure that it will be among those that will survive to participate fully in the favorable long range outlook for its industry.

## Big Expansion

Since the end of the war Oliver Corporation has carried on an extensive program of capital expenditures to strengthen its competitive position and improve working conditions for its employees. Specific purposes for which expenditures have been and are being made are: 1. To provide tooling for new products; 2. To reduce costs and improve quality by new purchases or the renovation of machinery, equipment, and tooling; 3. To renovate the company's plants for greater usefulness and to improve working conditions; 4.

To expand certain production facilities to provide a better balance within plants and as between the products of the various plants of the company; 5. To expand sales facilities in order to provide better services for customers.

The program of modernization and improvement has not only effected production economies but has increased the company's capacity by approximately 50 per cent since the end of the war. This in turn has enabled Oliver to show a rapid rise in sales and earnings. Net sales of \$73,782,568 for the fiscal year ended October 31, 1947, were the highest in the company's one hundred year history. Sales this year, both in dollars and in physical units, will establish a new all-time peak, the company reports, and earnings will show a substantial gain over last year's.

## Profits Small On Sales

Profits, however, represent a relatively small portion of the sales dollar, (5.5 per cent in the 1947 fiscal year) because the high sales volume has been accompanied by sharp rises in the cost of labor, materials, supplies, freight, and services. The company's annual report to stockholders for the 1947 fiscal year calls attention to the fact that the "break-even point" is now at a substantially higher level than in prewar years, and is a "matter of grave concern to the management."

In addition to improving the physical equipment and surroundings with which employees of Oliver Corporation must work, the company under the leadership of Mr. Phelps, a high-ranking General Motors production executive before he joined Oliver in 1943, has taken other steps that have had a considerable effect on employee morale. An intensive and continuing program of accident prevention has brought remarkable results; all employees are kept informed of company policy and developments through letters and through community advertising and publicity; and a suggestion system was installed recently.

Oliver Corporation, founded one hundred years ago, manufactures a comprehensive line of farm equipment, including wheel-type and track-type tractors, threshers, combine harvesters, corn pickers, windrowers, pick-up and stationary hay and straw balers, horse and tractor plows, disc plows, cultivators,

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harrows, plow shares, potato and hay tools, grain drills, corn planters, spreaders, lime sowers, beet tools, and other equipment for soil treatment. In addition, the company distributes certain lines of other manufacturers, such as grain and corn binders, and farm wagons and trucks.

The tractor line, which was expanded with the acquisition of the Cleveland Tractor Company in October, 1944, through an exchange of stock, includes tractors designed for industrial uses. Oliver also manufactures industrial transmissions. Tractors account for approximately 50 per cent of total sales, tillage equipment represents about 25 per cent, threshing equipment 12½ per cent, and other equipment and repair parts the remaining 12½ per cent.

Oliver Corporation's plants are located in South Bend, Ind., Battle Creek, Mich., Charles City, Ia., Cleveland, O., Shelbyville, Ill., and Springfield, O. Branch and sub-branch houses are maintained in 35 cities in the United States and in five Canadian cities. The company has carried out important improvements and expansions in its branch houses in the last several years.

### Exports Controlled

For about the last quarter century exports have ranged between 10 and 13 per cent of total sales. During the postwar years the company has restricted its foreign sales to this ratio, although the demand from abroad has been sufficient to take a much larger proportion of the total output.

Since its recapitalization in 1935, Oliver Corporation has plowed back \$12,397,000 in earnings. Additional capital to finance the company's program of improvements and to provide working capital was raised through the sale of common stock to shareholders in 1937, and through the sale of 82,000 shares of \$100 par 4½ per cent convertible preferred stock in 1944.

Oliver Corporation has no funded debt, but last December 1 the company borrowed \$1,000,000 under the terms of a bank loan agreement of October 1, 1946, which established a long-term credit of \$8,000,000. Borrowing under this agreement has now reached \$6,000,000, but will not be increased further, Mr. Phelps states. The bank borrowing was necessary to carry inventories, which are abnormally large because it is not possible to keep balanced supplies of various materials, according to Mr. Phelps. The difficulties of the present situation are indicated by the fact that the company currently is importing pig iron from Belgium in order to keep its foundries operating.

Outstanding capitalization consists of the 82,000 shares of \$100 par value preferred and 802,864 shares of no par value common stock. The preferred is

convertible into common stock at time on the basis of one preferred share for three shares of common. The common stock was split two-for-one in October, 1944. Dividends on the common shares were resumed in 1941, with a total of \$1 a share was paid during the calendar year. This was followed by payments of \$2 a share in 1942, \$2.50 in 1943, and \$3 in 1944. In 1945 the company distributed \$1 a share on the increased stock, in 1946 50 cents a share, and in 1947 \$1 a share. In 1948 the company established the policy of declaring dividends on a quarterly basis. Payments aggregating \$8 a share have been declared thus far this year, including a quarterly dividend of 50 cents and an extra of 25 cents a share, payable September 10.

Higher unit sales accounted for a major portion of the sharp rise in dollar sales for the 1947 fiscal year—\$73,782,568 from \$50,840,914 the year before, although higher prices also were a factor, the company reported. 1935 sales aggregated \$12,288,831, and a net loss of nearly \$500,000 was reported. A profit has been reported for each year since 1935.

Net profits increased at a faster rate than sales in the 1947 fiscal year. Net of \$4,072,385 was more than double the \$2,003,999 earned the year before. The "leverage" created by the existence of the preferred stock was reflected in the rise in earnings per share of common to \$4.61 in 1947 from \$2.04 a share for 1946.

Following is a comparison of net sales, net income, and earnings per share, for the fiscal years 1941 to 1947:

	Net Sales	Net Income	# Earn. Sha.	Pfd. Cor.
1947	\$73,782,568	\$4,072,385	\$49.66	\$4.61
1946	50,840,914	2,003,999	24.44	2.04
1945	58,554,020	1,675,687	20.44	1.67
1944	43,321,896	1,735,140	21.16	\$2.66
1943	30,864,080	1,761,953	.....	2.66
1942	28,458,926	*1,639,983	.....	2.44
1941	23,162,135	1,659,639	.....	2.44

#Based on stock outstanding at end of year, with adjustment of common stock earnings for two for one split in October 1944. \*After provision for contingencies etc., amounting to \$1,500,000. \$Based on stock outstanding before the acquisition of the Cleveland Tractor Company.

As of October 31, 1947, Oliver Corporation's current assets totaled \$39,737,000, including cash \$5,139,590, inventories \$26,307,902, Dominion of Canada bonds \$900,000, and receivables \$7,389,733. Current liabilities aggregated \$12,476,813, leaving net working capital of \$27,260,412. Inventories were \$4,229,713 higher than a year earlier, and receivables showed an increase of \$1,252,238. Fixed assets were carried at \$15,990,316, after allowing for depreciation reserves of \$16,081,672. Total assets amounted to \$56,330,711.



## Practical Magic With Magnets

(Continued from page 21)

thane. Another practical use is to hold a road map or a list of calls against the dashboard where it can be referred to easily. Magnetized crank case plugs and oil measuring sticks have been made to clean out abrasive metal from crankcase oil.

Whether he realizes it or not, the householder is benefiting from the new developments in permanent magnets in a number of ways. Radio loudspeakers are giving better performance, and at less cost, because permanent magnets are replacing the old electro-magnet. This is true also of the tone pick-up arms in the newer radio phonographs. Owners of television sets receive a clearer, steadier picture because magnets keep electrons from straying off the beam.

Magnetized checkers and chessmen used on metal boards prevent disasters when the board is jarred. Manufacturers of toys, games and novelties have come up with ingenious magnetic gadgets such as dolls, fish pond games, building blocks, toy dogs, and place card holders. This field offers wide open opportunity for exploiting the useful and amusing potentialities of the magnet.

### Surgeons Use Magnets

On the more serious side, the permanent magnet is performing invaluable service in the hands of physicians and surgeons. When young Johnny inhales a metal toy (provided it is made of ferrous metal) or when his mother unwittingly swallows a safety pin, a little magnet at the end of some flexible tubing may fish it out. Magnets are used by skilled physicians and surgeons to remove metal slivers from human eyes. Today, a well equipped hospital will have a set of magnets in various sizes and shapes, and doctors are now adding magnets to their own kits for emergency use.

In communications and electronics the permanent magnet is virtually indispensable. Recently, it has begun serving in such pure-science applications as cosmic ray research.

Back of this development is the fact that about 15 years ago a new metal alloy, Alnico, was perfected. Alnico is named for its constituents — aluminum, nickel, cobalt and iron. Its development has been one of the most important events in the whole history of magnet manufacturing. With this metal, which comes in seven grades designated as Alnico 1 to 6 and Alnico 12, it is possible to produce permanent magnets of tremendous power yet small size.

Alnico is an extremely hard and

brittle metal. It cannot be forged or machined, and must be formed by casting or sintering. If extremely close tolerances are required, they are achieved by grinding or by precision casting by the lost wax method. Newer alloys that are more flexible have been produced and are now being used in addition to Alnico. The major new alloys, which can be drawn, cut, stamped or pressed into almost any shape, are Cunico, Cunife, Indalloy, Silmanal and Vectolite. In addition to being machineable, the

newcomers have other special properties that make them especially well adapted for certain purposes. Sometimes magnets made with the newer alloys are used in connection with Alnico magnets, as in the case of the new G.E. watt-hour meter.

For downright power, however, Alnico is the undisputed champ, and Alnico 5, introduced in 1940, is the strong boy of the family. Alnico 5's energy value is approximately 25 times that of one per cent carbon steel, the first permanent magnet of commercial importance.

The science of magnet manufacture has become so intricate that magnets



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are made not only to precise position and size specifications but with magnetism flowing in the direction preferred by the customer. If a customer wants a magnet that will exert a given amount of tractive power, he can have one that will do just that and nothing more. If he wants it in some particular shape, dies will be made to give it just that shape. If he wants it to withstand severe temperatures and severe vibration or blows—forces that ordinarily would demagnetize even a permanent magnet—it can be produced through a process of artificial aging that will enable it to withstand the hardest usage.

#### How Permanent?

Whenever permanent magnets are discussed, the question is always asked: "How permanent are permanent magnets?" The answer is permanent, period. General Electric makes this flat statement: "Once a magnet has been stabilized to meet its operating conditions, it will supply a constant and uniform source of magnetic energy indefinitely." The company gives this illustration: "An example of permanent magnet stability is the cast Alnico 2 damping magnet of a domestic watt-hour meter. Accurate measurements have shown the magnet to be constant to within a few one-hundredths of one per cent per century as a result of proper manufacturing methods."

The real trick is in the manufacturing process rather than in the electrical charge. The Indiana Steel Products Company, which has manufactured magnets for 40 years and counts their applications at more than 25,000, ships most of its products demagnetized. The buyer performs the relatively simple task of magnetizing the piece.

A magnet can be magnetized instantaneously by inserting it in the field of an electro-magnet or by placing it in a wire coil, called a solenoid, and applying an electric charge. Magnet manufacturers prefer to ship the products demagnetized because this prevents the loss of magnetism through handling and contact with other magnets, avoids contamination from picking up magnetic particles, and eliminates the need for special packing. In some cases the best results from a magnet can be obtained only if it is magnetized after assembly into the finished product.

The range of weights in permanent magnets is almost as limitless as the range of shapes. Indiana Steel Products offers one magnet weighing only 0.006 ounce. The company also produces what it believes is the world

(Continued on page 36)





## INDUSTRIAL DEVELOPMENTS

IN THE CHICAGO AREA

INDUSTRIAL developments in the Chicago industrial area totaled \$17,640,000 during July, 1948, compared with \$16,541,000 in July, 1947. These developments included new construction, expansion of existing plants and the purchase of land and buildings for industrial purposes. Total expenditures in the first seven months of this year were \$80,348,000 compared with \$106,093,000 for the same period in 1947.

**Standard Oil Company of Indiana** has purchased 1,000 acres of land in Hammond on which it has started construction of a research building. Nicholson, Porter and List, broker.

**General Electric Company** will construct a 65,000 square foot building at 47th street and Kolin avenue in the Crawford development of the Central Manufacturing District. The building will be used as a branch plant for the manufacture of diesel electric locomotive equipment. A. Epstein and Sons, engineer.

**R. R. Donnelley and Sons Company**, printers and publishers, 350 E. Cermak road, has awarded the general contract for construction of a two-story and basement steel and concrete building at Calumet and Cullerton avenues. The building will contain more than 200,000 square feet of floor space.

**Robert Surray, Inc.**, has purchased the 12-story and basement building at 714-28 W. Jackson boulevard. The company is a wholly-owned subsidiary of Hart, Schaffner and Marx, clothing manufacturers.

**B. A. Railton Company**, wholesale grocer, has purchased the building at 4425 S. Kedzie avenue. The company plans to expand the building and will use it in the processing of food products. Louis B. Beardslee and Company, Inc., and L. J. Sheridan and Company, brokers.

**General Mills, Inc.** is enlarging its packaged cereal plant on East 104th street. Fitzsimons and Connell Dredge and Dock Company, contractor.

**Lever Brothers Company**, manufac-

turer of soap, edible oils, tooth paste and cosmetics, has purchased the business and plant of the John F. Jelke Company, margarine producers, at the corner of Polk and Washtenaw streets. Lever Brothers will expand the plant immediately.

**Triangle Package Machinery Company**, 1906 N. Spaulding avenue, has a one-story-structure under construction at 6633 W. Diversey avenue. The building will contain 45,000 square feet of floor space. Friedman Alschuler and Sincere, architects.

**Gary Screw and Bolt Company**, Gary, Ind., is building a 70,000 square foot addition to its plant.

**P. A. Starck Piano Company** has purchased a two-acre site at the corner of Ashland avenue and Webster street on which it will construct a new factory. Hogan and Farwell, broker.

**Henry Valve Company**, is constructing a 54,000 square foot building in the Clearing Industrial District in Melrose Park.

**Farley Manufacturing Company**, 2650 W. Belden avenue, manufacturer of confectionery products, is constructing a plant in Skokie. The new plant will contain approximately 31,000 square feet of floor area.

**A. J. Gerrard Company**, manufacturer of packaging equipment, is constructing a 30,000 square foot building on one and one-half acres of land in the Melrose Park section of the Clearing Industrial District.

**Monogram Glass Company** is completing construction of a 25,000 square foot plant which will house the firm's entire operations when completed. The company marks, finishes, and decorates all types of institutional and household glassware.

**Webster-Chicago Corporation**, 5610 W. Bloomingdale avenue, has purchased a building at McLean street near Pulaski road.

**Cook Research Laboratories**, 1457 W. Diversey parkway, a division of Cook Electric Company has started construction of a one-story addition.

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**Kobzy Tool Company**, 1535 N. Dayton street, manufacturer of tools, dies and metal stampings, has purchased the building at 1550 N. Fremont street, which it will operate as a branch plant.

**M. Rothschild and Sons**, 224 N. Peoria street, producer of boneless meat, will construct a plant at the southwest corner of Fulton and Halsted streets. The building will contain approximately 19,000 square feet of floor area.

**Thor Corporation**, manufacturer of electric household appliances, has purchased the three-story building at 2010 S. Marshall boulevard, formerly owned by the Mathieson Alkali Works. Nicolsen, Porter and List, brokers.

**Joliet Grain Company**, a new corporation, will begin construction of a cooperative grain elevator at the foot of McDonough street, Joliet.

**Streamed Cabinet Company**, 2315 N. Cicero avenue, will construct a 7,500 square foot building on Belmont avenue in Franklin Park.

**Harris Preble Fire Doors, Inc.** 4608 W. 20th street, Cicero, has a one-story brick addition to its plant under construction.

**Reader Mail Inc.**, producer and tributor of dress patterns, has purchased a plant on Western avenue near 150th street in Blue Island.

**Hoskins Paper Company**, 2118 Superior street, paper converter, purchased the building at 4425 S. Salle street.

**Calresin Corporation** of Culb City, Calif., manufacturer of plastic materials, has opened a processing research plant at 1742 Carroll avenue.

**Advance Metal Moulding Company**, 2508 W. Huron street, is constructing a factory in Addison, Ill.

**D. V. Weller Machine Shop**, 01 Lawn, Ill., a newly organized firm, is constructing a one-story brick and steel building in which it will have a general machine shop and welding work.

**Phil Kayman and Company**, 1331 N. Wells street, is completing construction of an 8,000 square foot one-story addition to its plant. The company manufactures venetian blinds.

**Edmonds Engineering and Manufacturing Company**, Evanston, manufacturer of electrical apparatus, will move to a newly acquired plant at 311 N. Francisco avenue. The plant contains 6,600 square feet of floor area.

**Klein Filter and Manufacturing Company**, 1225 School street, manufacturer of stainless steel and brass filters used by the brewing and distilling industries, is building an addition to its factory.

## Practical Magic With Magnets

(Continued from page 34)

largest and most powerful permanent magnet for cosmic ray research at the University of Chicago.

The magnet industry lists the functions of permanent magnets in three general classifications:

1. The transformation of mechanical energy to electrical energy. Familiar examples are the generator and the microphone.

2. The transformation of electrical energy to mechanical energy. Examples are the radio loud speaker, the electric motor, the telephone receiver, the electro cardiograph.

3. The creation of tractive energy through the magnet's power to attract and repel. Examples: (a) Holding and lifting, (b) producing tension in such devices as the thermostat, pressure controls, and certain types of switches, (c) transmission of motion without mechanical connections, as in the flow meter and other packingless drives.

Indiana Steel Products adds a fourth function. It is: "To change normal characteristics of material." According to the company, this field

of applications has not been widely spread and can be summed up as follows: "It has been found that the application of a magnetic field will change the dimension of a magnetic material; change the electrical resistance of a material in a magnetic field—for example, the resistance of bismuth with respect to field strength; affect the polarization of light; and produce other phenomena. An interesting example of another phenomenon is the application of a magnetic field by means of the permanent magnet to soft iron, in order to change the apparent A.C. permeability of some magnetic materials. This principle has been used in remote control indicators. Very few practical applications of these effects have been made but they may be found worthy of investigation for practical applications."

In spite of the tremendous increase in the use of permanent magnets they are of very ancient origin. Recorded history tells of a compass used by the Chinese about 2700 B.C. Undoubtedly this compass utilized a natural



ral permanent magnet, a piece of lodestone or magnetite ore. The ancients who found this mysterious lodestone were awed by its attraction for iron and by their observation that a piece of lodestone floated in water on a piece of wood or suspended in the air by a cord, always turned itself to a north-south direction no matter how many times it was turned back.

Today's engineers and scientists have acquired a vast amount of knowledge about magnets. They are just as mystified as any ancient, however, when it comes to explaining why a magnet can work ceaselessly for centuries and yet show no appreciable loss of strength. In short, nobody knows, even today, just what magnetism is. Mysterious though they may be, magnets are steadily becoming more useful handymen in the shop, office and home.

## Science Fights Noise

(Continued from page 14)

tion of this principle might be found in a machine which is enclosed to keep out dust but whose walls vibrate. By cutting holes and slots in the enclosing panels, the panels no longer act as baffles for the machine's vibrations. (Dust is kept out by means of cloth coverings over the holes and slots.)

Enclosure is sometimes the only practical solution to a noise problem, but generally it is less satisfactory than the other methods of noise reduction. Enclosures add weight, take up space, and make it more difficult to get at a piece of equipment. In addition, enclosure could even make a noise worse by creating a resonating sound box, by increasing the size of the radiating surface if the enclosure is coupled to the interior vibration, or by changing the source of the noise from a dipole to a simple radiator. An example of the successful use of partial enclosure is the open telephone booth. This booth is enclosed on three sides, thereby cutting down radiation, but it also utilizes sound absorbing materials to soak up some of the sound in the interior.

A plausible explanation for the apparent negligence that has permitted noise conditions to become so outrageously bad may be found in the fact that there is little exact knowledge on the harmful effects of noise on humans. Everyone knows that noise is annoying, that it interrupts sleep, interferes with work, and so on. But just how much damage does it do? The University of Chicago produced startling effects on rats by subjecting them to the constant ringing of a bell. The rats went crazy. The experimenter produced a strain of rats so sensitive to the sound of a bell that one tinkle would make them crazy.

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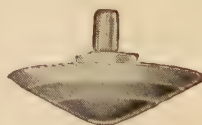




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Fortunately, human beings don't have to endure conditions of such severity. Yet, deafness is a trade mark of some occupations.

Whether it is ignorance or indifference that allows anti-social noise to persist is not always clear. The situation could change over night if lawsuits now pending should be decided in favor of complainants asking damages from noisy factories, or if legislation should be enacted in a few major cities or states, imposing penalties on noise makers. The National Noise Abatement Council favors legislation to control noise but believes it should be preceded by an intensive educational campaign to win public support. This approach has achieved outstanding success in several cities, Memphis in particular. Memphis has won a national reputation for its success in curbing one of the most aggravating of noises—the automobile horn.

The Chicago noise survey may prove to be the foundation for a civilizing program to protect the nation from unnecessary noise. Engineers making the survey will measure the noise conditions in scores of locations, and the contrast between neighborhoods generally recognized as desirable and the neighborhoods considered undesirable because of noise will probably be startling. With facts to guide them, lawmakers will be in a position to enact legislation to keep noise within limits that most people will agree are reasonable for good living.

The best hope for real improvement lies in the prospect that noise will come to be recognized as a waster of human resources and an unnecessary expense to industry. It is a good sign that Armour Research Foundation, probably the most active organization in studying noises and perfecting the techniques for measuring and eliminating them, today is working on the largest number of assignments in its history.

### TOWNS SURPRISE STATES

When individual towns want new highway facilities, it has become customary for them to seek financial aid from the state government. Now, however, the National Highway Users Conference notes a reversal of this trend in Massachusetts where 70 communities have asked legislative permission to advance funds for state superhighway construction within their borders. The suggestion, which is still pending, was backed up by a representative of the 70 towns who advised the governor, "Give us the green light and within five years you will have highway facilities of which Massachusetts can feel proud."





## TRANSPORTATION and TRAFFIC



THE nation's railroads were returned to their private owners July 9 after two months of government control. The announcement was made by Army Secretary Royall immediately following settlement of the wage and operating rules dispute between the carriers and three operating labor brotherhoods. A Presidential proclamation last May 10, one day prior to the scheduled date for a nationwide railroad strike, seized the railroads and directed the Secretary of the Army to operate them in the name of the United States Government. The wage agreement, reached after months of negotiations, calls for a 15½ cents hourly wage increase retroactive to November 1, 1947. This is the same amount as was recommended by a fact finding board earlier this year but which was rejected at that time by the unions. On the same day that the government took over the railroads, Justice T. Alan Goldsborough of the Federal District Court of the District of Columbia issued a restraining order against the strike of railroad employees. This was later followed by a preliminary injunction and on July 1 by a permanent injunction. Justice Goldsborough in issuing the permanent injunction held that regardless of how much right the unions may have on their side they cannot act to a point which will "disintegrate society" and within a few weeks upset our whole economic and political system. The present serenity in the railroad labor picture is expected to be short-lived as the railroad brotherhoods are understood to be preparing new demands for a 25 per cent increase in wages.

**Illinois Class Rate Increase Suspended:** Tariffs filed to become effective August 1 increasing freight rates on traffic moving under classification ratings within Illinois have been suspended by the Illinois Commerce Commission. The proposed increase was comparable to an increase authorized on interstate traffic in Official territory, effective August 22, 1947, in Docket No. 28300. A joint petition for suspension of the increases

filed by The Chicago Association of Commerce and Industry and the Illinois Territory Industrial Traffic League stated: "The effect would be to establish on Illinois intrastate traffic rates generally higher than the rates presently applicable for like distances within the States of Iowa and Wisconsin and, in many instances, higher than the rates applying interterritorially between points in Illinois and points in Zone 1 of Western Trunk Line territory or between points within Western Trunk Line Zone 1." This recent suspension of the Docket No. 28300 increases is the second such suspension ordered by the Illinois Commerce Commission within the last year. They were originally filed to become effective with the interstate Docket No. 28300 adjustment on August 22, 1947, but were suspended and assigned for investigation. These proceedings were later dismissed by the Illinois Commerce Commission on the advice that the carriers had withdrawn and cancelled the increase. A few weeks afterwards new tariffs were filed restoring the increase. Had the tariffs been permitted to become effective, it would have boosted the base class rates by 10 per cent to which would be superimposed the 22½ per cent Ex Parte No. 162 and the 30 per cent Ex Parte No. 166 increases.

**Illinois Authorizes Express Rate Increase:** The Illinois Commerce Commission has granted the Railway Express Agency, Inc. a temporary increase of 10 cents per shipment on all express shipments moving within the state of Illinois. The increase was authorized on one day's notice and became effective August 9. This is the first increase in Illinois express rates since January 10, 1947, although increases were granted on interstate traffic, in Ex Parte No. 163, on October 25, 1947, and again on January 22, 1948.

**Examiner Reports on Stopping-in-Transit Rules:** In his proposed report in I. & S. Docket No. M-2745, Interstate Commerce Commission Examiner Tobias Naftalin finds that the present and proposed rules of motor

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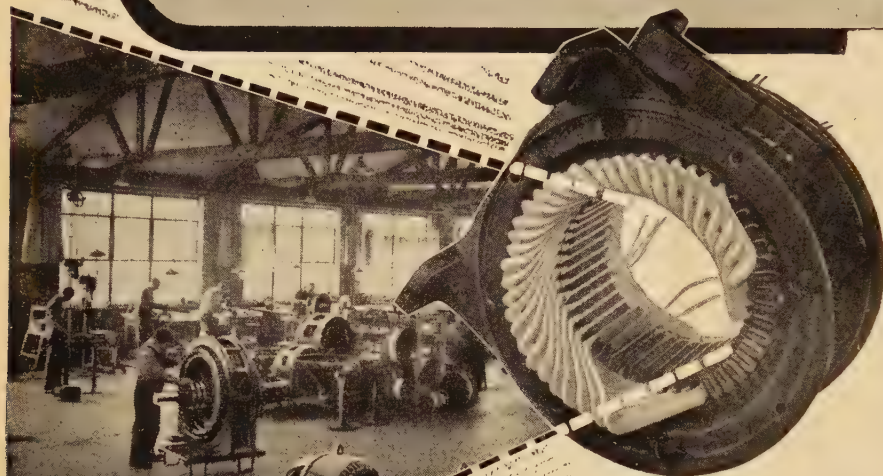
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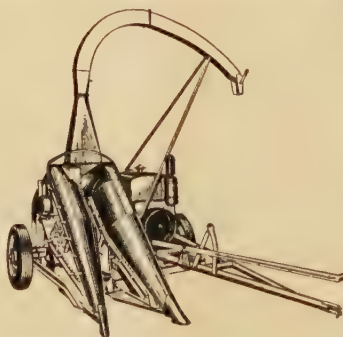
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carriers in Central territory governing stopping-in-transit for partial loading or unloading to be unreasonable. The proceedings involve stopping-in-transit rules published in tariffs of the Central States Motor Freight Bureau restricting the service to single-line traffic, to one stop in transit and to not in excess of 112.5 per cent of the carriers shortest certificated route from point of origin to final destination. The proposed rules were to have become effective May 18, 1947, but were suspended on the request of The Chicago Association of Commerce and Industry and others. Among the 13 findings of Examiner Naftalin were: (1) that there is a necessity for not less than two stops in transit; (2) that there is a necessity for providing not less than one pick-up in addition to the first pick-up within the original point of origin and one delivery in addition to the final delivery within the final destination; (3) that reducing the service to one stop in transit and single line movements is unreasonable; (4) that restricting the service to 112.5 per cent of the carrier's shortest route from origin to destination is unreasonable. He recommended that the commission enter an order requiring the carriers to cancel their present and the proposed rules under investigation and to establish rules in conformity with his findings.

**Central Motor Rates Increased**  
July 15: Increased class rates published in tariffs of the Central States Motor Freight Bureau, which had been under suspension since May 20, 1948, in I. & S. Docket M-2878, were permitted to go into effect July 15. The tariffs increased rates by 20 per cent and superseded a 10 per cent increase which became effective January 6, 1948. The Interstate Commerce Commission had suspended the tariffs to June 8, 1948, and later extended the suspension to and including July 14, 1948.

**Eastern Passenger Fares Increased**  
An average increase of 17 per cent in passenger fares in Eastern territory, including Illinois and Michigan intrastate fares, has been authorized by the Interstate Commerce Commission and became effective July 19. One-way coach fares were raised from 2.5 cents to three cents per mile and Pullman car fares from 3.5 cents to four cents per mile. Round trip fares were increased generally in the same proportion as one-way fares. The fare boost will yield the carriers an estimated \$61,000,000 annually which will make up for a \$50,000,000 deficit in revenue due to a decline in the volume of traffic and will allow \$11,000,000 additional revenue.



**I.C.C. Approves Joint Rail-Barge Rates:** The Interstate Commerce Commission in their report in Docket No. 26712 find that through routes and rates for joint barge and rail transportation by common carriers and by railroad and common carriers by water on the Mississippi and Warrior Rivers to be necessary and desirable. The report also prescribes reasonable differentials between rates.

## Here, There and Everywhere

(Continued from page 8)

March, 1947. June, 1948, deliveries to the railroads totaled 10,387 cars, according to the American Railway Car Institute, bringing total deliveries for the first six months of 1948 to 55,345. The June production was based on March steel receipts, however, and because steel receipts have dropped since that month the car building industry does not expect to be able to hold the 10,000 car level for long, S. M. Felton, president of the A.R.C.I. says.

• **Manufacturers Take Note** — According to Frederick Rahr, color consultant for the paint producing Martin-Senour Company, women everywhere are seeking brighter, stronger, clearer colors. Rahr says the ladies "want color everywhere in their homes and are prepared to use it freely with good taste and genuine enthusiasm."

• **Postwar Success** — Rudd-Melikian, Inc., manufacturers of an automatic coffee dispensing machine, report that their machines are now serving nearly half a million cups of coffee each day in factories, depots, warehouses, hospitals, stores and at sports events. The company, which was incorporated in May, 1946 by two Army Air Force veterans, has just declared its first dividends to stockholders.

• **Electric Sleuth** — An electronic detector so sensitive it can ferret out metal impurities weighing less than one-tenth of a billionth of an ounce has been developed at the Westinghouse Research Laboratories. Designed to aid in the search for improved metals, the device is said to spot within five to 15 minutes a trace of material comprising as little as one millionth part of the total sample. Regular chemical methods would require days to do the same job. The detector is the latest adaption of the mass spectrometer — the electronic tube that "fingerprints" materials by sorting them out according to the weights of their atoms.



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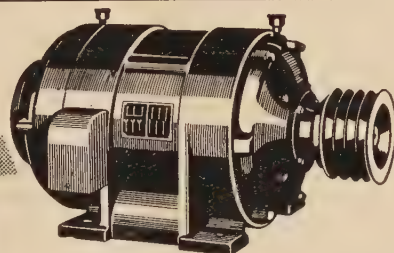
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# New Products

## Pulley Slip Retarder

The old problem of slipping pulleys can be eliminated, the Condersite Engineering Corporation, 2015 Chancellor Street, Philadelphia, Pa., says with its new, all-purpose lagging which provides pulleys with a frictional surface. The lagging is cut to size for any pulley and is applied with a special compound which the company claims adheres so tightly that a hammer and chisel are required to remove it.

## Quick Spring Tester

Manufacturers who use many small springs have the job of determining their load strength accurately and quickly. The task can be greatly simplified, says the Hunter Pressed Steel Company, Lansdale, Pa., with the company's new Model 217P load tester which can test 200 springs an hour, handle loads up to five pounds, and spring lengths up to 12 inches. The tester employs precision ball bearings as fulcrums for the steel weighing head and weight pan.

## Three-Way Reproduction

An innovation in the graphic arts has been made by Stanley Wessel and Company, 737 North Michigan Avenue, Chicago, in its unique method of "three-dimensional color-printing." Window and counter display cards, car-cards and billboards are produced in deep relief by the use of a thin plastic material and special inks. Reproductions thus look like the actual objects.

## Safe Gasoline Nozzle

The B. F. Goodrich Company, Akron, Ohio, has introduced a new synthetic rubber gasoline hose nozzle tube that fits all types of gasoline pump valves and is said to outlast metal nozzles two to one. Goodrich lists these other advantages: the rubber tube provides a permanent safeguard against fires or explosions from static electricity, it provides an instantaneous ground at every point, it will not mar car finishes or porcelain pump panels, and it causes no radio disturbances.

## Quick Copy Unit

For companies which want facsimiles of written, typed, printed or photographed material in a hurry, Fairchild Aerial Surveys Inc., 53 West Union Street, Pasadena, Cal., has developed a new "copy-roll kit" which is said to be capable of producing more than 30 finished copies an hour at ap-

proximately five cents a copy. Weighing less than two pounds, the exposure unit fits an average brief case or desk drawer and requires no dark room.

## Thickness Gauge

The Photocon Research Products Company, 1062 N. Allen Avenue, Pasadena, Cal., has introduced a new ultrasonic machine which not only measures wall thickness of metal, glass, and plastic parts but also checks them against flaws. Called Metro-scope, the device can test materials even if only one surface is exposed and it is said to pick up tiny imperfections that will not show up in X-ray tests.

## Car Holder

The exasperated motorist whose car invariably slips off the jack during the course of tire changing may find a new product called "NoRol CarBlock": a worthwhile accessory. Made of cast aluminum, the device is about the size of a basketball and can be unfolded to allow a car wheel to roll into its cradle. When not in use it can be folded and carried in the car trunk. The manufacturer is the NoRol CarBlock Corporation. Sales will be handled by the Godden Agency, Inc., 259 W. Michigan Avenue, Jackson, Mich.

## Aluminum Caddy

For the perspiring golfer, the Ercona Manufacturing Company, 130 W. 102nd Street, New York City, has brought out a collapsible aluminum and stainless steel golf bag carrier that handles either one or two bags. "King Caddy" has roller bearing wheels, two-inch rubber tires, and is small enough to fit in a locker.

## "Travel Crib"

The problems of the vacationing mother can be minimized with a new combination crib and play pen which, when folded up, can be carried like a piece of luggage. The "Travel Crib" weighs 37 pounds, measures 29 by 20 by 9 inches when closed and is made by Brecher Brothers, 708 Broadway, New York.

## Quick-Assembled Truck Body

Another innovation in aluminum's big bag of new tricks is a packaged aluminum truck body which, according to the manufacturer, Brown Industries, Spokane, Wash., can be put together by two men on any standard one to three ton truck chassis in two hours. Panels are shipped bolted together, hence no welding or riveting is necessary. The flooring is made of



corrugated aluminum alloy, Coralite, which is said to have the rigidity of one-half inch aluminum plate.

#### Pressed Chairs

The Plastics Division of General American Transportation Corporation, 135 S. LaSalle Street, Chicago, is now mass-producing plastic chairs from steel molds for use in reception rooms, hotels, schools and restaurants. While the average conventional chair has several dozen parts, the new chair has a one-piece back and seat of plastic, four bolts, and four legs of steel or aluminum. Some 200 chairs a day can be made on a 500-ton compression molding press in the company's East Chicago plant.

#### Screw Remover

For imbedded screws that refuse to loosen, the East Windsor Tool and Die Company, Warehouse Point, Conn., has created a tool called "Screwmaster," which employs a cam on which blade turns when the tool is struck on the top. A hammer blow thus provides both a direct thrust and a sharp twist.

#### Engine Heater

Looking forward to winter, the Petroleum Heat and Power Company, Stamford, Conn., has developed a new engine heater which preheats the engine before starting, keeps water system from freezing, and provides extra interior heat. By September, 12-volt direct current models will be available for buses; later the company may develop a similar 100-volt model.

#### Small Check Writer

The Todd Company, Rochester, N. Y., has now introduced a midget version of its standard check writer, designed for small businesses and individuals. Called "Personal Protector," the machine prints the dollar amount through a ribbon which shreds indelible ink into the fiber of the paper so that it becomes impossible to change the amount without destroying the check. The device will be sold through department stores.

#### Embossed Aluminum

The Reynolds Metals Company, Louisville, Ky., has started production on a new type of embossed aluminum sheet, which, according to the company, provides "a partially fabricated product."

#### Correction:

The manufacturer of the three-ounce, quick-heating soldering iron, described in these columns in the June issue of *COMMERCE*, is Transvision Incorporated, New Rochelle, N. Y., not the H. B. Gold Company, as previously listed.

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## The New Draft

(Continued from page 22)

under 18½ years if they enlist in and fulfill the training requirements of any of the above organizations. Certain aviation cadets and advanced reserve officer trainees are also exempt, as well as "sole surviving sons" who are the only brothers or sisters in military service.

**What are employers' re-employment obligations?**

Employers should note that all drafted employees, one-enlistment volunteers, and reservists ordered to active duty must be re-hired to a position of like seniority, status and pay unless hired "temporarily" in the first place. To be eligible for re-employment, a veteran must have completed satisfactory military service; he must apply for his old job within 90 days after discharge; and he must still be qualified to perform the duties of his job. (If not qualified, he must be given another job of approximate seniority, status, and pay which he can handle.)

Employers can plea "changed circumstances" that make re-hiring impractical, but as before this will be a weak leg to stand on. The thorny "seniority" issue which harassed employers before has now been clarified somewhat. If two or more men leave the same job for military service, the man who left first has prior re-employment rights; if he does not exercise them, his successors enjoy the rights in order. (A possible eventuality: as the draft progresses, it may hurt older men who are drafted later, but have secondary re-employment claims. Employers may be forced to take back young men with short company service and reject older, longer service employees.)

Restored employees will be regarded as having been on furlough or leave of absence; hence, they retain full seniority, plus any additional employee benefits, company insurance and the like. They must not be discharged "without cause" for one year.

**What is the status of men who have served in the armed forces?**

Draftees may be re-called to active duty only in the event of war. Men completing service of less than three years are transferred to reserve status or five years and are subject to war-time active duty until they have completed three years of reserve service, or an extra year of active duty, or are discharged from the reserves.

Eighteen-year-old volunteers will be transferred to reserve status for six years, but, except in time of war, may not be called for active service for more than one month in any one

year. In this case, a man may be put into an organized reserve unit or officers training course for four years if it causes him no "undue hardship." These four years of service exempt him from further non-war duty, but, if he does not so serve, he may be ordered to active duty for an additional year.

**How many will be drafted?**

Best estimate now is that only about 660,000 men are eligible, of which the services expect to take between 225,000 and 250,000 by next July. The Army figures there are roughly 9,370,000 of draft age. From this number, it subtracts about 820,-



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000 now in uniform, about one million 18-year-olds not subject to immediate call, and about 5,140,000 exempted veterans, leaving only about 2,410,000 for draft board consideration. Of these, selective service figures about 1,458,000 will be found physically or otherwise unqualified and about 291,000 more deferred for other reasons, leaving an active draft pool of roughly 660,000 men. It has been estimated that a company with an average distribution of employees by age, will lose only one in 200 workers to the draft.

## Stamps

(Continued from page 19)

stamps to veterans and to veteran groups which distribute stamps to ex-service personnel. One benefactor of this policy is an organization called Stamps For The Wounded, established during the war to distribute stamps to hospitalized veterans.

Composed chiefly of collectors and stamps dealers, Stamps For The Wounded now visits some 15,000 to 20,000 hospitalized veterans each week, taking them stamps collected from many different sources together with albums and accessories purchased with voluntary contributions or donated by stamp dealers. About half the stamps thus distributed to veterans in the Chicago area come from business concerns, among them the Continental Illinois National Bank and Trust Company, First National Bank of Chicago, International Harvester, Quaker Oats Company, and the J. Walter Thompson Company.

Stamps For the Wounded, which carries the endorsement of the Veterans Administration and the Red Cross, operates under a decentralization plan whereby regional workers collect stamps from hundreds of companies and private collectors. As any collector can guess, the intense interest created by the hobby has produced amazing results with many seriously injured patients. Some of those who have been less seriously injured have eventually left hospital beds to accept jobs with stamp firms when they were unable to work at their regular trades.

Meanwhile, as the search goes on in thousands of company mailrooms, collectors are anticipating increasingly rich returns as foreign aid trading with Europe and Asia intensifies. Another outside possibility that lurks in every collector's mind is a further reshuffling of the world's political geography, which would mean that nations issuing stamps today might be using a dominant nation's stamps tomorrow. In any event, the stamps on this morning's mail may be the next year's collectors' items.



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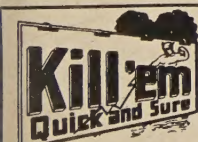
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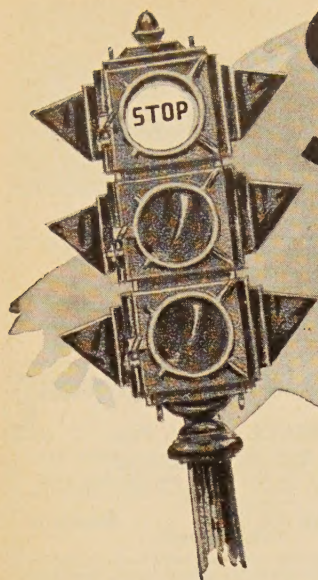
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# STOP ME-IF—

At the supper table one night on the farm, the hired man was telling about a breeder who was developing a strain of sheep for speed. "He tells me," the hired man said, "that he's got lambs now that can run forty miles an hour."

"But why does he want lambs that can run forty miles an hour?" asked the bright young girl.

"To keep up with Mary," he replied.

A Kentucky colonel always closed his eyes when he took a drink. When questioned concerning this habit, he explained: "The sight of good lickah, suh, always makes my mouth water, and I do not care to dilute my drink, suh!"

The 98-pound jockey married a woman at least twice his weight. After the ceremony, he asked some of the guests to drop over to his flat. The best man looked doubtful.

"Thanks, Sammy," he said, "but, after all, it's kind of late. Maybe your wife wouldn't approve of company at this hour."

The jockey shrugged.

"Oh, I don't expect you chaps to stay long," he explained. "All I want is for you to help me carry the bride over the threshold."

"Is this the hotel clerk?" inquired the guest over the phone.

"Yes, it's the clerk, stupid. And what's eating you now?"

"That's what I want to know!"

She: "Which is more satisfied, a man with a million dollars or a man with six children?"

He: "A man with six children."

She: "Can you prove it?"

He: "Yes, a man with a million dollars wants more."

Friend: "How can you make a living tuning pianos way back here in the country?"

Tuner: "No trick at all — in slack times I tighten barbed wire fences."

Uncle: "You boys of today want too much money. Do you know what I was getting when I married your aunt?"

Nephew: "No, and I'll bet you didn't either."

Betty: "How did mamma find out you didn't take a bath?"

Billy: "I forgot to wet the soap."

Tired after a hard day, a distinguished congressman in Washington handed the menu back to the waiter and said: "Just bring me a good meal."

A good meal was served and the congressman gave the waiter a generous tip.

"Thank you, suh," the waiter said, "and if you got any friends what can't read, yo' jus' send 'em to me."

Asked what he thought of the two candidates for the election, an enlightened voter replied: "Well, when I look at them I'm thankful only one of them can get elected."

Henry: "My dear, I really don't believe you can ever teach that dog to obey you."

Mrs. Jones: "Nonsense, darling. Remember how obstinate you were when we were first married?"

Jones, a good family man, had been enticed into a poker game, and as the hands of the clock moved relentlessly toward the morning's wee hours, he grew more and more apprehensive. Finally, at 3 a.m. he had a sudden inspiration. He called his home, and when the little woman answered the telephone, he shouted in frenzied haste: "Don't pay the ransom, I'm back."

While at the county fair a middle-aged farmer took his wife into a tent where a rhumba dancer was doing her act. The farm wife stared for a moment at the act, then she turned to her husband and whispered, "Sam, I think we'd better go out of this place."

Sam pointed to the platform and said, "Let's wait till she gets over her stage fright, Ma. The poor little thing's just scared she's shakin' in her shoes."

He: "See that big substitute down there on the bench? I'm sure he'll turn out to be our best man."

She: "Why, you darling! Isn't that rather sudden?"

A little girl went to see the president at the bank and explained that her girl's class was raising money, and would he please contribute.

The banker laid a dollar bill and a dime on the desk and said, "Take whichever one you want."

The little girl picked up the dime and said, "My mother always taught me to take the smallest piece." However, picking up the dollar bill also, she added, "but so I won't lose this dime I'll take this piece of paper to wrap it up in."

Little Elsie had attended church for the first time. On the way out, the pastor asked her how she enjoyed the services: "Well," said Elsie, "I thought the music was very nice but your commercial was too long."

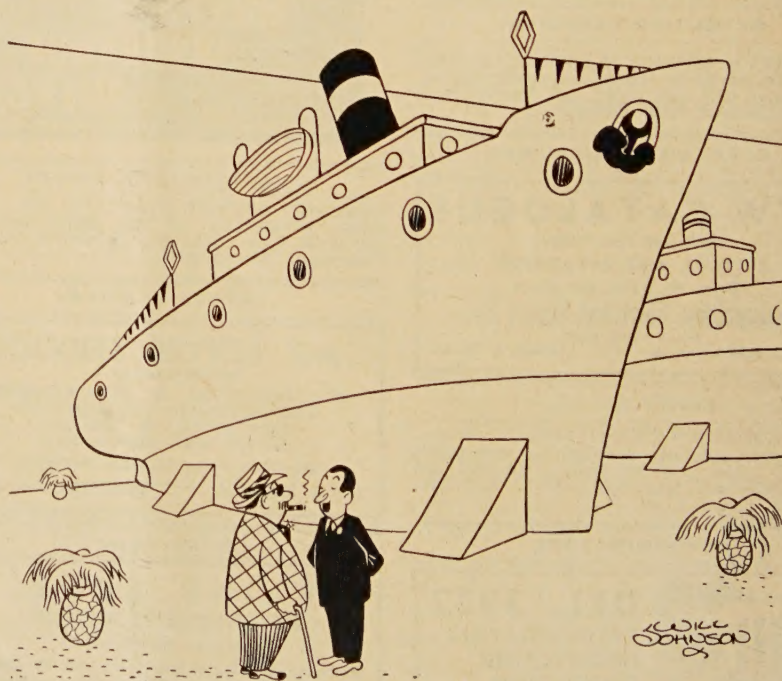
Marriage is an institution which teaches a man thrift, regularity and other virtues he wouldn't especially need if he stayed single.

"Dad, what is heredity?"

"Heredity, my boy, is what a man believes in until his son begins to act like a fool."

Blonde: "Now that we're engaged, you are going to give me a ring, aren't you?"

Sailor: "Sure; what's your phone number?"



"Why, yes, we have an easy payment plan — \$10,000 down and \$10,000 a month."